

AROUND THE WORLD IN 50 DAYS

"Inside Dope"

by GEORGE F.
TAUBENECK

Stories of the Week
International Good Time
Bankers' Paradise
Hop-Skip-and-Jumps
Everything But Coffee

Stories of the Week

In the East, they're saying that Sputnik Three soon will be followed by No. 4. "The Russians naturally will send up another one to keep an eye on the first."

To the greeting, "how are you?" glum Turkish citizens reply: "better than I'll be tomorrow" (more on this later).

International Good Time

"Dope" was farewelled in Singapore at a rip-snorter of a party which was Chinese New Year, Fourth of July, and the Queen's Birthday rolled into one.

Chinese, Malay, British, Australian, and American businessmen joined hands and voices in this salubrious example of how men of all creeds and races can work and play together in peace, harmony, and goodwill.

Place: the modernistic American-type Cathay hotel. Menu: English and American appetizers, chicken a la Malay, shrimps with pine seeds, sharks' fins in soy sauce, roast suckling pig, pressed wild duck, chicken wings with abalone, steamed pomfret, Indonesian rice-staffel, Chinese wonder cake.

All this was washed down by the assemblage with Scotch, bourbon, Australian beer, rice wine, Tiger milk, cognac, and various brightly hued aperitifs.

Among those who joined in the festivities were the omnipresent S. H. Tan; Paul McMichael and James Sullivan of Carrier; Don Dickerson of Condair Engineering; Rahbek Rasmussen of the East Asiatic Co. (Kelvinator Dept.); J. Howard, S. P. Locke, and James Boles of George Lee Ltd. (Frigidaire); J. G. Houtman and E. E. Houtman of Climate Engineering (Westinghouse); and visiting Americans W. B. Woodward and W. A. Block of Westinghouse Electric International Co.

In addition to the jollity, a Singapore Refrigerator & Air Conditioning Council was formed (rather, revived after being dormant).

Bankers' Paradise

Bangkok, Siam, is every bit the jewel you'd imagine after seeing that richly tapestried movie, "The King and I."

(Concluded on Page 14, Col. 1)

UTILITY CAMPAIGN

Gas Cooling Drive Could Benefit All

By C. Dale Mericle

DETROIT—Faced with an immediate need for more summer revenue and the possible threat of losing its entire residential load to electricity, the gas utility industry is waging an aggressive campaign to promote air conditioning.

One million dollars will reportedly be spent in the effort

this year with approximately half of this going into research and development of new products.

Prime target is the residential market, where the gas industry recognizes it has been weakest, and the main "enemy" is the heat pump, although this honor is shared to some degree

with electric resistance heating.

Impact of the gas industry's campaign on the public will probably benefit the entire air conditioning industry, even the heat pump perhaps. Although some gas air conditioners may be sold at the expense of electric units, this additional advertising and selling effort cannot

(Concluded on Page 32, Col. 1)

June 12 Hearing Set on Los Angeles Code Changes

LOS ANGELES—A public hearing on proposed changes in the Los Angeles city codes on heating, ventilating, and air conditioning and on refrigeration is scheduled for 2:30 p.m., June 12 in room 214 at city hall.

The changes were drafted by a 117-member industry code advisory committee. They were termed by R. P. Cravens, chief of the mechanical bureau of the city's Department of Building and Safety, "excellent legislation and a distinct improvement over present codes."

However, three revisions to these changes have been suggested by the Department's staff "either due to lack of necessary personnel to carry out some of the proposed requirements, difficulty in administering some of the requirements, or legal barriers to enforcing some of the proposed revisions," Cravens said.

(Concluded on Page 8, Col. 1)

TOT Towers Will Increase Prices From 5 to 10%

HOUSTON, Texas—Despite what is described as "the latest round of price cuts" in the cooling tower industry, TOT Towers, Inc. announced that its prices will not be reduced but, on the contrary, will be increased from 5 to 10%.

"This company was founded 20 years ago in the belief that quality and service can be profitably produced and sold in the cooling tower field," Sales Manager W. C. (Andy) Anderneck declared.

"TOT Towers cannot take another of the industry's twice-a-year price slashes and continue to maintain its standards of quality and service. We believe that the cooling tower market will recognize and respect this stand."

TOT Towers, with headquarters and manufacturing plant here, produces both mechanical and atmospheric cooling towers.

BEHIND PAGE ONE . . .

RESIDENTIAL Air Conditioning

- Dealer Research Group Seeks To Cut Costs, Improve Profits..... 15
- Numbered and Packaged Prefab Ducts, Fittings Speed Installation In Projects, Cut Costs..... 20
- Good Duct Design Can Minimize 'Trouble' Installations, Which Eat Up Profit..... 24

COMMERCIAL Air Conditioning

- One Air Conditioner Cools Two Rooms In Circular Valley Presbyterian Hospital..... 11
- 'Data Center' Allows 1 Man To Control Climate In All Public Rooms of Queen Elizabeth Hotel.... 23

INDUSTRIAL Air Conditioning

- Accurate Army Maps Assured by Year-Round Air Conditioning In Field Office..... 12
- Petrone Pleads for 'Profitability' Offers 3 Steps To Assure It..... 10
- Catalogs, Manufacturers' Salesmen Design-Engineer Tells What He Expects of Them..... 19
- UL Revises Remote Condensing Unit Standard 36

WEATHER Looks Best In the West

WASHINGTON, D. C.—"Above normal" temperatures for the central plains states, part of the Mississippi valley area, the West Coast, and all of the southwest (with "much above" normal temperatures for some parts of the southwest) is predicted in the U. S. Weather Bureau's outlook for June.

"Near normal" temperatures is the prediction for the Great Lakes, Ohio Valley, and parts of the southeast.

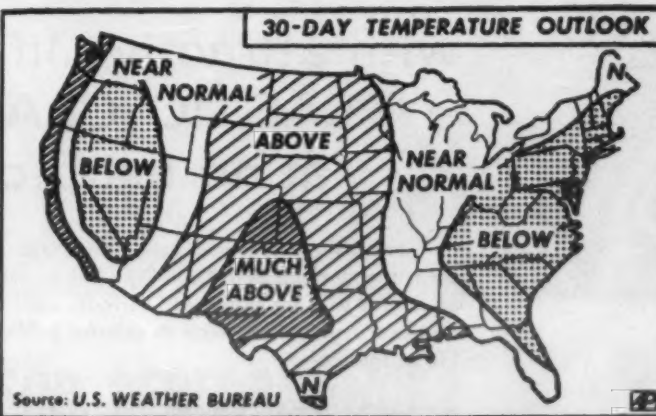
Somewhat below normal temperatures are predicted for the middle Atlantic and eastern seaboard areas. Heavy precipitation (which may mean high humidity conditions) is predicted for the Atlantic Coast areas from North Carolina to Maine, and for parts of the Midwest and Northwest.

Fedders Has Biggest May And Second Best Month

MASPETH, N. Y.—The largest number of air conditioners ever shipped for the month of May, and the second largest month in its history, was recorded by Fedders-Quigan Corp., the company announced.

According to Salvatore Giordano, president, Fedders air conditioner shipments for May

(Concluded on Page 4, Col. 5)



'Hot and Cold Deck' Air Handling Unit Permits Flexible High Pressure System

LOS ANGELES—A multi-zone type air handling unit for high pressure air conditioning systems, said to be the first of its kind, has been introduced here by Drayer-Hanson, a division of National-U.S. Radiator Corp.

Previewed at the recent Western Air Conditioning Show here, the "Hot and Cold Deck Air Conditioning Unit" as Drayer-Hanson calls it has been put into production. The company also reports that it will be used

in the air conditioning of the multi-stored new national headquarters for the Kroger Grocery Chain in Cincinnati.

Twenty-four hot and cold deck units, together with Drayer-Hanson HH air handling units and FZ multi-zone types, and exhaust fans, will supply year-round air conditioning for the 25-story building. The project is being handled by Dallas contractor Sam P. Wallace, with Hedrick

(Concluded on Page 39, Col. 3)

**Know
where you're
heading . . .
Insist upon
READING!**



READING COPPER TUBING *truly trouble-free* for Refrigeration & Air Conditioning Equipment

Made by Copper Tube SPECIALISTS

READING TUBE CORPORATION
EMPIRE STATE BUILDING NEW YORK 1, N. Y.
WORKS: READING, PA.

PHCIB Announces Plans for Developing Dealer-Contractor Sales Training Program

LOS ANGELES — Plans of the Plumbing-Heating-Cooling Information Bureau for the development of a sales training program were outlined by Norman Wicks, executive director of the PHCIB, in an address at the 69th annual convention of the Mechanical Contractors Association of America at the Ambassador hotel here.

"An important part of the program approved by the bureau's board of directors is aimed at serving the need for a large number of trained contractor-dealers," Wicks said.

"One part is a training program to be developed by the bureau's Sales Training Council made up of the industry's experts in sales training.

"It will examine what has

been made available in this industry in relation to the requirement of developing the modern merchandising contractor, and then proceed to develop and field test the course.

"It is the intent that this course shall be put on in as many local areas as it possibly can and that, as required, it be tailored to meet the requirement of the region, utilizing local educational facilities wherever possible.

"Field work by qualified people is needed to implement these programs, with the assistance and through the agency of local and regional association staffs and members, where available."

Wicks also explained the other specific plans and activities of the bureau in addition to sales training.

Cooling, Heating Wholesalers Merge In Grand Rapids

GRAND RAPIDS, Mich.—H. H. Unseld, general manager of Harris Supply Co. here, announces the boards of directors of Harris Supply and Michigan Automatic Heating Equipment Co., a local heating wholesaler, have approved the consolidation of their companies as of June 1, 1958, subject to approval of the stockholders and the federal government.

The name of the new firm will be Heating & Cooling Wholesalers and it will operate at combined headquarters in Grand Rapids, with branches in Flint, Kalamazoo, and Lansing, Mich.

Michigan Automatic Heating handles a complete line of warm air parts and equipment, wholesale only, including furnaces, grilles, registers, sheet metal ductwork, controls, and accessories. It has been in Grand Rapids about 13 years.

Harris Supply has served the trade in and around Grand Rapids for over 21 years.

Gibson First Quarter Sales Ahead of 1957

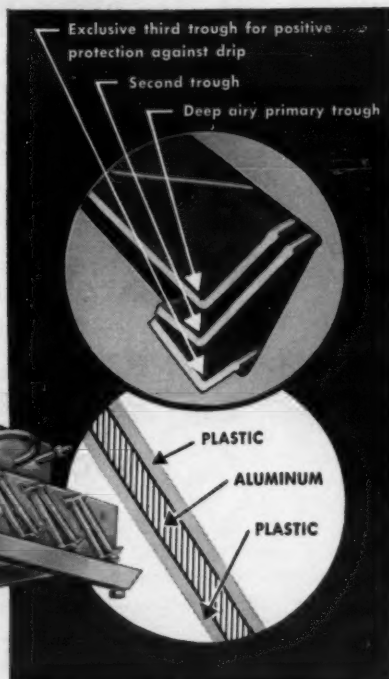
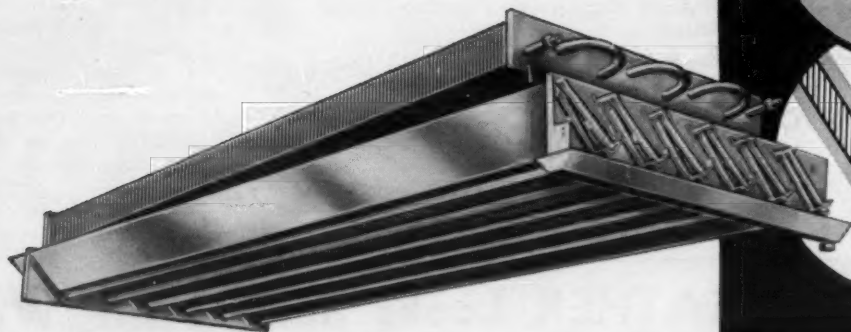
GREENVILLE, Mich. — Air conditioner, refrigerator, and freezer sales of Gibson Refrigerator Co. in the first three months of this year are ahead of those of the same quarter last year, C. J. Gibson, Jr., president of the Hupp Corp. division reported.

Increased sales came during the period of reduced sales by the whole household refrigeration industry, he pointed out.

Gibson air conditioner sales rose 6% while the industry's total sales plummeted 40%, and the company sold 4% more refrigerators as industry sales dropped 26%, he said. Sales of Gibson household freezers increased 8%, while the industry's total sales sagged 2%.

Employment at Gibson's Greenville and Belding, Mich. plants remains steady, Gibson said, adding that production lines have been down only 6½ days in the past seven weeks.

NEW KRAMER COIL and BAFFLES



with attractive lifetime
PLASTIC CLAD ALUMINUM
at no extra cost!

Permanently Attractive Baffle—Constructed of a new plastic-clad aluminum which combines the strength and flexibility of aluminum with corrosion-resistant plastic for lifetime beauty. It will not chip, peel, corrode, sag, fade nor get brittle. It is absolutely odorless and sanitary. The coil with its colorful baffle will retain its attractive appearance for the life of the cooler.

Dripless Triple-Trough Design—The triple-trough—a unique Kramer feature—provides a deeper primary trough for unrestricted draftless circulation of cool air. The narrow third trough reduces dripping to a minimum, making the Kramer triple-trough baffle virtually drip-proof.

Easy to Install—Kramer coil and baffle combinations are completely assembled at the factory. Shipped in closed wooden cases, they arrive on the job clean and ready for installation, saving assembly and installation time.

Immediate Shipment—A complete range of 15 carefully selected sizes giving maximum Btu per dollar for every application are carried in stock for immediate shipment. Both left-hand and right-hand baffles are available.

WRITE FOR BULLETIN CBC-276C

KRAMER TRENTON CO. • Trenton 5, N.J.

44 YEARS OF CONTINUOUS ACHIEVEMENT IN HEAT TRANSFER



JUST WHAT IS PAR FOR COMPRESSOR PERFORMANCE?

Have you ever established it? Your percentage of line rejects and field returns on compressors you are buying now may be as small as you can reasonably expect. But without an established par for judging performance, you cannot know for certain . . . you can only assume.

A champion compressor, as a champion in sports, should be determined by its performance in the cold, impartial field of open competition—a performance measurement being used by

more and more companies today with gratifying results. Many of our new customers have reported rejects and returns down as much as seventy-five percent since giving us part of their business.

We believe the quality control governing the manufacture of Bendix-Westinghouse compressors and condensing units now enables them to outperform any units on the market and thus increase your profits. But we can't prove it until you make us prove it. How about a trial order?

Bendix-Westinghouse

EVANSVILLE, INDIANA

A Division of Bendix-Westinghouse Automotive Air Brake Company, Elyria, Ohio
Export Sales: Bendix International, 205 E. 42nd St., New York 17, N.Y.



New Concept Offered by Gas Industry

MORE THAN 18 cu. ft. of storage cabinets is included in new "Multimatic Wall" gas kitchen which features foldaway cooking burners, wall oven-broiler, refrigerator, water heater, washer-dryer and warm air furnace in compact unit 8 ft. high and 10 ft. wide. The furnace is readily adaptable to gas air conditioning. The unit was designed by Walter Dorwin Teague Associates in cooperation with the American Gas Association.

Proposed Albany Law Would Require Water Saving Devices on Small Cooling And Commercial Refrigeration Units

ALBANY, N. Y.—A new City of Albany water conservation move would require water conserving devices on small air conditioning units and water-cooled commercial refrigeration equipment.

Proposed ordinances introduced in the Common Council also would add new water charges for refrigeration units. The measures, introduced by Alderman Fahey, Seventh Ward, would not affect air conditioners not using city water.

The measures follow a study by Benjamin L. Smith & Associates, consulting engineer, who Mayor Corning said, found air conditioning and refrigeration put a heavy drain on water sup-

ply in peak demand periods. Air conditioning alone, he said, accounts for 100 million gallons of water used a year, compared with 60 million gallons in 1950.

Air conditioning units of 5-ton refrigeration capacity or less would have to have devices that recirculate and conserve water. Present regulations require conservers only for units over 5 tons.

All installations after July 1 would have to have the conservers. Present units with more than 2½-ton capacity would have to have them by June 1, 1959, and those under 2½ tons or less by June 1, 1960.

For commercial refrigeration units, new installations after

July 1 would have to have both conservers and valves to limit use of water from city mains.

Units with conservers would be subject to a charge of \$2 per year per unit of horsepower; for those without them the charge would be \$10. Regulators would have to be installed by Sept. 1, conservers by May 1, 1959.

Fedders Sales --

(Concluded from Page 1, Col. 3) topped the previous May by 29%. This represents the units shipped to the firm's wholesale distributors throughout the country.

The only month in the company's history that saw more air conditioners shipped was June, 1957.

For the first nine months, Fedders shipments of its own air conditioners are 6% greater than the like 1957 period.

While reports of distributor sales to dealers for the month of May are not yet completed, this figure was 16% ahead of last year at the end of eight months, it was pointed out.

Giordano stated that the increasing movement of Fedders units at a time when "recession" talk is dominant, indicates that the public is willing to buy what it needs.

Miami Distributor Moves to Bigger Bldg.

MIAMI, Fla.—Air Conditioning Distributors, Inc., Westinghouse air conditioning and heating distributor, formerly located at 759 NE 79th St., has occupied its new 40,000-sq. ft. building at 3655 NW 74th St.

Marshall Berkson, president of Air Conditioning Distributors, said Miami Air Conditioning Co. and Maco of Jacksonville, two principal Florida Westinghouse dealers and affiliates of his firm, also occupy offices in the new building.

The building is claimed to be the largest of its kind in the southeast devoted exclusively to the air conditioning and heating industry.

A large sheet metal shop equipped with the latest machinery is part of the operation.

Miami Air Conditioning Co. has 22 trucks based at the plant to handle service and delivery. It employs 75 persons.

Webster Chairs Meeting

CAMDEN, N. J.—Warren Webster, president of Warren Webster & Co. here, presided as chairman of the recent national meeting of the Government Contracts Committee of the National Association of Manufacturers, held in Beverly Hills, Calif. The committee seeks to assist in the improvement of government defense contracting procedures, policies, and practices.

OPPORTUNITIES FOR SALES: Number 6 In A Series



EASY TO IDENTIFY

Roll-O-Tube's contents are plainly marked in large, easy-to-read print on a color-coded tape on the carton's outer edge.



EASY TO CARRY

All the user has to do is pick the carton up by its convenient center hole. It simplifies and speeds up handling.



EASY TO OPEN

No trouble here. Just unzip the color-coded tape and there's the tube.

THE Refrigeration Wholesaler AND Wolverine Roll-O-Tube®

Over the years one of selling's most important maxims has been "Nothing improves sales like improved customer service". Putting this to the test—and reaping the benefits it brings is easy—if you do it the Wolverine Roll-O-Tube way. Because Wolverine packages its refrigeration tube with the customer in mind, it helps make his work easier—helps him do a better job. The following cartoons illustrate what we mean. Take a look and then point these Roll-O-Tube features out the next time a service engineer asks for copper refrigeration tube. For complete information about Wolverine's product line write for your copy of the Refrigeration Catalog.



USE IT AS A REEL

Just make your connection and reel out the required amount of tube to do the job. The remainder stays in the carton—safe and clean until needed again.



REMOVABLE SEAL

Wolverine seals its refrigeration tube with a plastic plug that gives positive protection—can be replaced in unused tube—eliminates cutting tube ends—permits tube to be easily threaded through partitions, etc.



CALUMET & HECLA, INC.
CALUMET DIVISION
URANIUM DIVISION
GOODMAN LUMBER DIVISION
WOLVERINE TUBE DIVISION

In Canada
CALUMET & HECLA OF CANADA LIMITED
WOLVERINE TUBE DIVISION
CANADA VULCANIZER & EQUIPMENT CO. LTD.
WOLFIR TUBE DIVISION

WOLVERINE TUBE
DIVISION OF
CALUMET & HECLA, INC.
17226 Southfield Road
Allen Park, Michigan
Manufacturers of Quality-Controlled Tubing and Extruded Aluminum Shapes

PLANTS IN DETROIT, MICHIGAN AND DECATUR, ALABAMA • SALES OFFICES IN PRINCIPAL CITIES

EXPORT DEPT. 11 E. 40TH ST. NEW YORK 16, N.Y.

Thinking of —

- changing territories
- expanding your territory
- taking on new lines—

Check the
CLASSIFIED ADS

Your opportunity may
be there.

Borg-Warner Moves Central Office to Air Conditioned Bldg.

CHICAGO—The central office of Borg-Warner Corp. was moved recently to the new air conditioned Borg-Warner building at 200 S. Michigan Ave., at the corner of Adams St. opposite the Art Institute.

The corporation, which vacated space in the Continental Companies building at 310 S. Michigan Ave., after a stay of almost 30 years, took over the top three floors of the new building.

Later the company will also occupy additional rooftop quarters which will be used for conferences and meetings. This space and a number of offices are still under construction and will not be completed for several weeks.

Chicago's newest skyscraper was named after Borg-Warner because the corporation is the building's principal tenant. The company, however, has no financial interest in the structure.

Another tenant is the Crane Co.

The 21-story building represents an architectural first in Chicago with windows on all four sides of the structure.

Recold Quadruples Sales Volume Along Atlantic Seaboard

LOS ANGELES — Recold sales along the Atlantic Seaboard have more than quadrupled since Recold warehouses were established in Elizabeth, N. J. and Atlanta, according to H. T. (Hy) Jarvis, president of Recold Corp.

Overnight delivery out of these new warehouses is considered by Jarvis to be an important reason for the sale increase.

The company has been gradually expanding activities in the past several years and the new eastern warehouses are a part of the over-all expansion, it was pointed out.

In addition, Recold extended activities on the international front since the first of the year too, with an establishment of a new corporation, Recold de Mexico, S.A.

The new firm, headquartered in Monterrey, Mexico, will manufacture all Recold products for distribution in that area.

New Louisville, Ky. Firm To Sell, Service Air Cooling Equipment

LOUISVILLE, Ky. — A new firm which will sell and service commercial, residential, and industrial air conditioning equipment has been organized as a partnership by Charles E. Schmidt and Vernon L. Larson.

Called Air Conditioning Contractors, the company has offices at 4006 S. Brook. Schmidt will serve as manager and Larson as manager of construction and service. Miss Joann Coffman has been elected secretary-treasurer.

EI Announces Training Materials Directory for Utility Firm Executives

NEW YORK CITY — Edison Electric Institute has announced the publication of a new *Directory of Training Materials*.

The directory, prepared for use by utility company sales executives and their sales allies, to help them locate sales training materials when the need arises, has been compiled by the Institute's Sales Personnel and Training Committee.

BOOK HAS 14 SECTIONS

The 14 sections in the book list films, slide sets, scripts, tape and wax recordings, complete sales training kits, sets of booklets, manuals, etc., used in the training of salesmen. More than 150 separate items are listed under such headings as "Electric Refrigeration," "Elec-

tric Space Heating," "Electric Air Conditioning," and "Electric Heat Pump."

Copies of the directory, at \$2.50 each, may be obtained from Commercial Dept., Edison Electric Institute, 750 Third Ave., New York 17, N. Y.

West To Talk To Detroit Heating Group June 12

DETROIT—How to find and apply overhead will be outlined for members of the Detroit Warm Air Heating Association Thursday, June 12, by W. G. West of American-Standard.

West's presentation, entitled "Plan for a Profit," will be delivered at 8 p.m. in the Fort Shelby hotel here, according to the announcement.

Publicity Barrage Planned

Urge Dealers, Contractors To Become Members of Home Improvement Council

NEW YORK CITY — Local dealers and contractors who have not yet become active members of the Home Improvement Council have been urged to do so at once, "in order to benefit from an unprecedented publicity barrage."

Within the next few weeks, Executive Director Don Moore reports, HIC will be publicized on one network television program, in nine national magazines, 1,400 newspapers, and by 1,500 radio and TV stations.

"This is what consumers will be hearing and reading about":

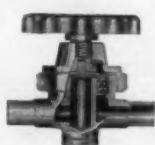
1. "How's Your Home?" contest—offering a total of \$125,000 in cash prizes—in which the homeowner evaluates the ade-

quacy of his home, its contents, and grounds. The deadline for entering is June 30.

2. "Better Your Home" contest—requiring completion of an actual home improvement project. A total of \$50,000 in prizes will be awarded. This contest begins July 1. Contest blanks can only be obtained from HIC members.

3. HIC's Code of Ethics, "prohibiting misrepresenting in advertising or selling."

4. HIC's public service message, which tells consumers: "In the recipe for prosperity, your home is the basic ingredient. . . . Home improvement, especially in 1958, is a sound investment, a sensible purchase."



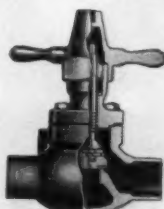
"Golden Bantam" Packless Valve—Type 516

A small packless line shut-off valve with $\frac{1}{4}$ " thru $\frac{3}{8}$ " flare, O.D.S. or extended end solder connections. Also "Blue Bantam" and "Standard" Balanced-Action packless line shut-off valves with $\frac{1}{4}$ " thru $\frac{3}{8}$ " Fl. and $\frac{1}{4}$ " thru $1\frac{1}{2}$ " O.D.S. size connections.



Cross-Vu® Hermetic Seal Liquid Indicator

Brass indicator with glass fused directly to metal body. Maximum working pressure 500 P.S.I. Connection sizes: $\frac{1}{4}$ " thru $\frac{3}{8}$ " M.Fl., M.Fl. x F.Fl. or with extended ends and solder connections.



Wing Cap Packed Valves—Type 203

The standard of the industry. Bronze alloy with O.D.S. connections in sizes $\frac{1}{2}$ " thru $4\frac{1}{2}$ " (Globe) and $\frac{1}{2}$ " thru $3\frac{1}{2}$ " (Angle). Also semi-steel with $\frac{1}{2}$ " thru $2\frac{1}{2}$ " F.P.T. connections and semi-steel flanged type globe and angle valves with brass O.D.S. or steel butt-weld adapters, and one piece socket weld or F.P.T. flanges in a wide range of sizes from 1" to $5\frac{1}{2}$ ".

HENRY for low installation cost

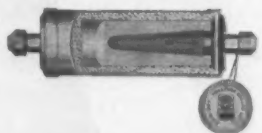


Angle Relief Valve—Type 52



ASME—NB—National Board Certified

Forged brass automatic pressure relief valve. Pressure setting range 50 to 450 P.S.I. Size connections: (M.P.T. Inlet x Flare Outlet) $\frac{1}{4}$ " x $\frac{1}{4}$ ", $\frac{1}{2}$ " x $\frac{1}{2}$ ", $\frac{3}{4}$ " x $\frac{3}{4}$ " and $1\frac{1}{2}$ " x $1\frac{1}{2}$ ". Also $\frac{1}{2}$ " O.D.S. x $\frac{1}{2}$ " O.D.S.



"DRI-COR" Filter-Drier—Type V800

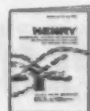
Ceramic fired desiccant filter-core in bed of granular desiccant—a blend of molecular sieves and activated alumina. Provides high capacity drying even at relatively high temperatures, micron filtration, efficient acid removal and low pressure drop. Pressure sealed. Wide range of sizes with $\frac{1}{4}$ " thru $\frac{3}{8}$ " Fl. connections. "DRI-COR" Filter-Drier Cartridges also available for Henry Cartridge Type Angle Driers.



"Y" Strainer—Type 895

Flanged design permits cleaning without removing strainer from line. Screen cylinders securely located by spring tension preventing by-passing of refrigerant. Forged brass end caps with integral end connections. Screen area: 10 thru 150 sq. in. Size connections: $\frac{1}{2}$ " thru $4\frac{1}{2}$ " O.D.S. Angle and straight-through type strainers also available.

Write for catalogs describing the complete line.



Catalog 103
Valves, Driers,
Strainers and
Accessories.



Catalog 202
Ammonia
Valves and
Accessories.



Catalog FF
Forged
Carbon Steel
Fittings.

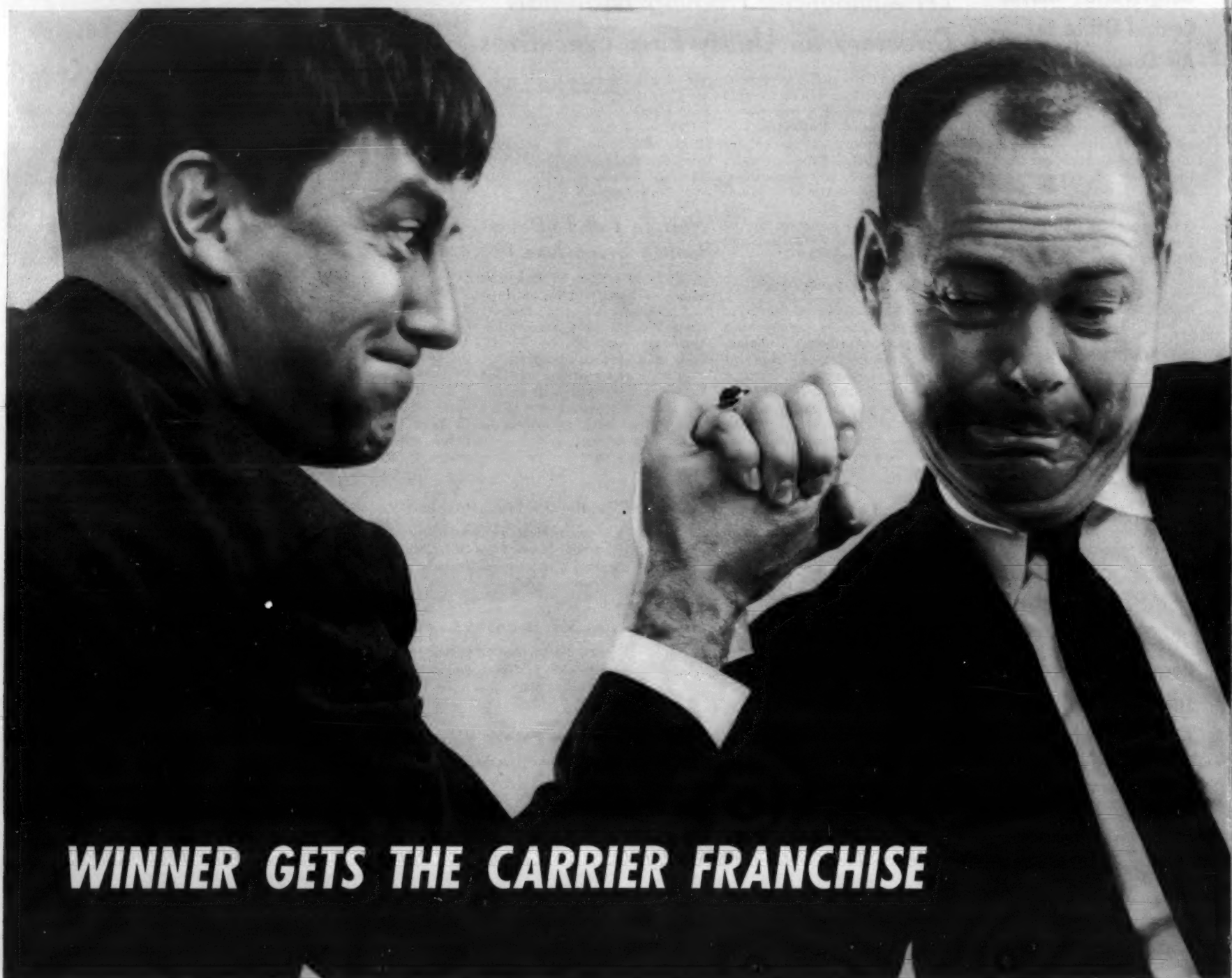


HENRY VALVE COMPANY

Manufacturers of Valves, Driers, Strainers, Fittings and Accessories for Refrigeration, Air Conditioning and Industrial Applications.

3215 NORTH AVENUE, MELROSE PARK, ILLINOIS (Chicago Suburb)

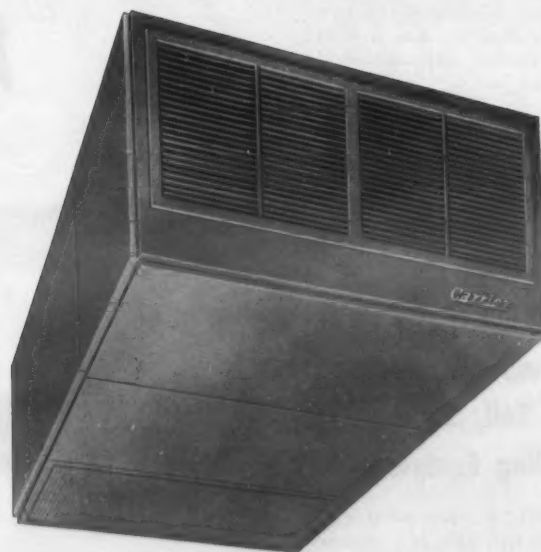
CABLE: HEVALCO, MELROSE PARK, ILLINOIS



WINNER GETS THE CARRIER FRANCHISE

*A multi-million-dollar research program brings an unending parade
of exciting new products to the Carrier dealer*

**THIS MONTH CARRIER
INTRODUCES A COMPACT
COMMERCIAL COOLING SYSTEM...
THE NEW SUMMER WEATHERMAKER**



Ten good reasons why the Carrier franchise is the most valued in the industry

1. A Carrier dealer gets engineering help from his distributor on difficult jobs. His distributor knows the air conditioning business and he understands dealer problems.
2. A Carrier dealer receives continuous training in the most modern techniques for air conditioning engineering, selling, installing and servicing.
3. A Carrier dealer can obtain expert management consultation on any phase of his business operation. Assistance in accounting, financing, inventory control, personnel compensations, etc.
4. A Carrier dealer doesn't have to tie up his own capital in inventory. Under a special Douglas Guardian Warehouse Plan he enjoys the benefit of having the equipment he needs on hand and yet he pays nothing, not even interest, until the equipment is sold.
5. A Carrier dealer is protected against price reductions on unsold inventory at all times. If he buys his equipment before the selling season begins, this price-protection can last for up to eleven months.
6. A Carrier dealer enjoys the most liberal product warranties in the business. These high allowances assure customers' satisfaction without affecting dealer profits.
7. A Carrier dealer gets sales support from the Carrier National Buyer Organization. This team sells national firms who require air conditioning installations in the dealer's town, turns the order over to the dealer.
8. A Carrier dealer is backed with hard-selling advertising support. Heavy national magazine and key-market newspaper advertising sell the Carrier dealer as the man who knows air conditioning best. Liberal co-op policy, sales promotion material, let him tie in effectively at the local level.
9. A Carrier dealer enjoys unequalled prestige — his products are known and respected. The Carrier dealer is Mr. Air Conditioning wherever he's located. And judging from the potential market for air conditioning, his future growth and success are unlimited.
10. The largest selection of air conditioning equipment on the market. If it can be air conditioned, Carrier dealers have what it takes!

WHAT'S IT LIKE?

The new Summer Weathermaker is a compact fan-coil unit which teams with a matching condensing unit to supply 7½ or 10 tons of cooling in stores, factories, schools, churches, etc. All of its components are concealed within the attractive cabinet. This enables the Summer Weathermaker to be installed where ordinary bulky cooling units would be an eyesore. It can be suspended horizontally from the ceiling, as shown at left, installed vertically on the floor, hung on the wall next to the ceiling or put outside on the rooftop. The air-cooled condensing unit is located in any convenient outdoor location. A heating coil may be added for year-round air conditioning.

WHY IS IT BETTER?

Versatility! In addition to its flexibility of installation the Summer Weathermaker itself is modular in

construction so that all removable casing panels are interchangeable. The supply air grille can be installed in any one of three sides of the plenum; the return air grille can be installed in either the front or bottom of the unit. The double centrifugal fans, too, can be revolved to any of three positions.

HOW IS IT A GOOD THING FOR THE CARRIER DEALER?

The new Summer Weathermaker answers the need for a cooling unit compact and good looking enough to "appear in public." It's a further example of the Carrier dealer's competitive edge. He never has to fit the customer to the product, he has the right equipment for every prospect. Furthermore, the new Carrier Summer Weathermaker was designed for easy, simplified, fast installation to keep the Carrier dealer's estimates and costs low. It's a volume unit the dealer can install almost as easily as a room air conditioner.



INTERESTED IN BECOMING A CARRIER DEALER?

Talk it over with your Carrier distributor. You'll find his name in the Yellow Pages of your telephone book. Carrier Corporation, Syracuse, N. Y.

June 12 Public Hearing Set on Los Angeles Code--

(Concluded from Page 1, Col. 2)

Any comments on the changes made in the code should be sent to the Board of Building and Safety Commissioners prior to the June 12 hearing, acting secretary James E. Bihr stated in the notice for the hearing.

After the Board acts upon the code changes following its public hearing, the approved code goes to the City of Los Angeles city council for final enactment.

Arthur G. Clark, chairman of the code advisory committee, reported, "Primary objectives of the advisory committee were to present codes containing provisions based on safety and which are practical and understandable."

"Except in cases deemed necessary for the protection and safety of the public, the com-

mittee refrained from provisions which would increase the cost of construction."

Clark is assistant chief of the Mechanical Bureau.

The staff of the Department recommended deletion of proposed subsections in the heating, ventilating, and air conditioning code which would require plans and specifications for new buildings with over 10,000 sq. ft. of floor areas, be prepared by and bear the signature and state registration number of a professional mechanical engineer.

This provision passed the committee by a very close margin in the heating, ventilating, and air conditioning code, but failed of adoption in the refrigeration code.

Proponents of this provision include those on the committee

from engineering societies, including a member of the Consulting Engineers Association of California.

Opposed by RACCA

Those opposed include RACCA of Southern California, which detailed its objections in a letter to the Mechanical Division of the Department.

The committee's proposal to require a permit for equipment in the heating, ventilating, and air conditioning code included evaporative coolers.

The staff recommendations of the Department suggested elimination because evaporative coolers already require an electrical permit for connection.

The proposal that all gas or oil-fired heating appliances must be vented was recommended for modification by the staff

to apply to occupancies or buildings erected after the effective date of the proposed code.

As originally written the proposal would be retroactive to existing buildings.

Points of Opposition

The RACCA letter opposing provision for signature of a mechanical engineer, made these points:

"1. If there was a justifiable reason for having state licensed mechanical engineers sign plans and specifications the greatest need is on small work where the public may be easily duped but all agree that this condition is highly impractical."

"2. The contractors who install large heating and air conditioning work in this city have historically drafted plans and specifications for the work and the excellence of large heating and air conditioning jobs in this

city is well known throughout the nation.

"Thus, there is no reason in the interest of public health and safety to require state licensed mechanical engineers to sign the plans and specifications as a condition for the issuance of a permit."

"3. There is no contractor doing the large heating and air conditioning work in this city nor any owner or member of the public who has asked that this condition be incorporated in the Code."

"Only certain of the engineering societies have sought this provision, which is not a sufficient reason to warrant it in the interests of public health and safety."

"4. Many of our smaller contractors have engaged in the profession of the design and installation of air conditioning work through the years but do not have a state licensed engineer on their payroll."

"I would thus be burdensome on the smaller contractor, which of course, must be passed on to the public, to require the services of a state licensed mechanical engineer to develop and sign the plans."

"5. The number of consulting engineering firms specializing in the design of large heating and air conditioning work (excluding state licensed contractors) is very limited. We need not say more on this subject."

"6. The state has undertaken the regulation of professional engineers and so far as mechanical engineers are concerned, the state does not require that plans of any size be signed only by a licensed mechanical engineer."

Asks Uniform Application Of State Law

"Without at this time questioning the right of the city to require the signature of state licensed mechanical engineers we feel that the city should follow the policy of the state to the end that there be uniform application of state law."

RACCA has asked its members to appear at the hearing to voice their objections to this requirement.

Henry Ely, executive secretary, told members that if a mechanical engineer's signature is required, "present estimates indicate that it will be two or three weeks before such plans and specifications can be reviewed by the city."

NCRSA Reports

Dollar Sales Down Only 5% for First Quarter

PHILADELPHIA—A decline of less than 5% in total dollar sales for the first quarter of this year as compared with the same period last year was averaged by distributors reporting to the National Commercial Refrigerator Sales Association.

"In view of current business conditions, this is gratifying," said Marie Lawton, executive secretary, who reported the figures.

She said dollar net profit before taxes for the quarter dropped 11.58% below last year.

Inventories, as of March 31, were 2.04% greater than on the same date in 1957.

Only Halstead & Mitchell offers a cooling tower with a 20-YEAR GUARANTEE

ON THE WETTED DECK
AGAINST FAILURE
DUE TO ROTTING
OR FUNGUS ATTACK



Here's why this is important: Fungus growth on cooling tower wood fill very often can accumulate to the extent that it actually obstructs air flow through the tower. This reduces tower capacity and affects performance of the refrigeration or air conditioning equipment involved. In severe cases, the wood will rot and cause tower failure.

Treated Deckings—For positive protection against such harmful effects, Halstead & Mitchell subjects the wood deck material used in all H&M cooling towers to a special, pressure creosote treatment. That's why only Halstead & Mitchell offers a 20-Year Guarantee on the wetted deck against failure due to rotting or attack by fungus. Original tower capacity is maintained, and that reliability is what cooling tower purchasers need.

Anti-Corrosion, Plastic Coatings—Halstead & Mitchell Cooling Towers have many other design features that increase tower life and keep maintenance costs to a minimum. For instance, the cooling tower casings are completely protected against corrosion by separate plastic coatings of Vinsynite, Vinyl Zinc Chromate, and chlorinated rubber, after assembly. Every edge, every corner, is sealed against rust.

Permanently Sealed Bearings—Another example, fan bearings are permanently lubricated and sealed. Damaging moisture is kept out. Maintenance and periodic greasing are eliminated.

H&M Cooling Towers are available in capacities of 2 thru 125 tons. Types include propeller fan, centrifugal fan and take-apart models. See your local wholesaler, or write for more information. Halstead & Mitchell, Bessemer Building, Pittsburgh 22, Pa.



COOLING TOWERS • WATER-COOLED CONDENSERS
AIR-COOLED CONDENSERS • FINNED COILS

Can Install Air Handling Section Of G-E Heat Pump In Fourth the Space

BLOOMFIELD, N. J. — General Electric Co. has announced the availability of its new "Weathertron" line of heat pumps in which the air handling section installed in the house "represents a saving of space three times that of former heat pump models."

According to General Electric spokesmen, this model brings to a total of 12 the selection that the company now offers.

The new Weathertron heat pump system is "extremely flexible and offers many economies to the builder and the homeowner," it was stated.

INSTALLATION COSTS CUT

"Installation costs have been noticeably reduced for application in existing buildings. Air circuits for indoor and outdoor sections have been simplified and special installation systems and procedures have been eliminated. Service and maintenance have also been made simple.

"Measuring less than 2 by 2 ft. in size, the indoor blower system of the new Weathertron split system with its heating and cooling element, accounts for less than 25% of the space previously taken by earlier models. It utilizes unique design for direct up-flow, horizontal, or downflow without need for special metal extensions or mechanical changes. It is of a single unit design suitable for every application—and only 21 1/4 in. high."

The outdoor section consists of a remote compressor-condenser unit "small enough to be obscured and factored in with landscape surrounding the home."

The remote type Weathertron heat pump compressors have an internal thermal protection and exclusive metal-to-glass leads, G-E said.

DIRECT DRIVEN BLOWER WHEELS USED

"Direct driven blower wheels are used to great advantage, making for quieter operation and longer service—no belts are used," it was pointed out. "Supplementary heat can be tailored to the job and installed anywhere in the indoor supply ductwork.

"There are three sizes offered in the new Weathertron splits with 28,300, 33,900, and 48,000 B.t.u. capacities."

With the introduction of this system, General Electric believes that the market applica-

tion of air source heat pumps will be more than doubled in the next few years.

"The new split system Weathertron heat pump will give many more customers the first opportunity to enjoy the benefits of heat pump air conditioned living that soon will be enjoyed in the 1,001 housing units being built at Patrick Air Force Base for missile personnel running Cape Canaveral or in the 1,254 homes at Homestead Air Force Base for pilots and servicemen manning our Strategic Air Command," it was stated.

Not only have space requirements been reduced significantly with this new heat pump system, General Electric officials pointed out, but the price of the Weathertron today is more than 50% less than it was five years ago when the company displayed its first Weathertron to the air conditioning industry.



NEW WEATHERTRON blower unit takes 2 by 2-ft. space.

Heat Controller Enters Home Cooling Market with Remote, Packaged Lines

JACKSON, Mich. — Moving into the residential air conditioning field, Heat Controllers, Inc. here has introduced a line of remote and self-contained air-cooled packaged units, J. A. Knight, president, announces.

The remote line is made in 2, 3, 3 1/2, and 5-hp. condensing unit models with matching "A" and "H" type coils and evaporative and universal blower units.

The self-contained line consists of 2, 3, and 4-hp. models. Both lines carry the "Comfort-Aire" label.

Horizontal air flow over oversized condenser provides uninterrupted performance at high ambients, the company claims. Each unit has a hermetic Tecumseh compressor, "Freon-22" refrigerant, starter, and Minne-



SELF-CONTAINED "Comfort-Aire."

apolis-Honeywell control panel. Grille on remote condenser is removable for service.

In the evaporator units, all coils have sweat fittings for field charged installation. Coils are complete with accumulator drier, capillary, and heavy gauge, fully insulated cabinet with sloping drain pan.



It's one of People. Products. A Philosophy of Business. Quite a few dollars, but a lot more sense . . . makers of trouble-free, quality-plus instrumentation, air conditioning and refrigeration copper tube . . . forward-looking staff management . . . modern plant layout and production engineering . . . developers of Electronic Tube Tester, helping to improve tube quality in the industry . . . pride in workmanship . . . pride in products . . . continuing source of supply . . . friendly cooperation . . . willingness

to serve any and all customers' needs . . . engineering consultation yours for the asking . . . all we ask is that you let us earn the right to do business with you.

SEND NOW FOR YOUR COPY OF "THE STORY OF KENSICO TUBE". Free 16-page illustrated booklet upon request. Write Kensico today, Dept. ACN-1, for your copy.



Rufus Lisle Manages NAHB Housing Center

WASHINGTON, D. C. — Appointment of Rufus Lisle as general manager of the National Housing Center was announced by Neal J. Hardy, director.

Lisle was with Frigidaire Div. of General Motors for 16 years. In 1954 he left Dayton to become manager of Frigidaire's Washington office, and since 1956 he has served as Washington representative of United States Plywood Corp.



KENSICO

TUBE COMPANY INCORPORATED
Mount Kisco, New York

CAMBRIDGE, MASS. • BUFFALO, N. Y. • LINDENHURST, L. I., N. Y.
GOSHEN, N. Y. • ROSELLE, N. J. • PHILADELPHIA, PA. • PITTSBURGH, PA. • DETROIT, MICH.
EVANSTON, ILL. • DURHAM, N. C. • ATLANTA, GA. • FT. LAUDERDALE, FLA.

Petrone Pleads for 'Profitability'

**ARI President
Offers Steps
To Assure It**

1. Build In Sound Gross Profit
2. Don't Kill Your Profit
3. Use Accurate Sales Forecasting

WASHINGTON, D. C.—"The importance of profit to the future of the air conditioning and refrigeration industry cannot be overestimated. Without it we cannot grow, can't develop new and better products, can't attract needed capital, can't

provide job security. Profitability is the keystone of our industry—an insurance premium we must meet regularly to guarantee our future security."

Don V. Petrone, president of Typhoon Air Conditioning Co. and vice president of Hupp Corp., made the above statement as the keynote of his first message to the membership of the Air-Conditioning & Refrigeration Institute, following his election to the presidency of ARI early in May.

Declaring that the one thing he wanted his term of office as ARI head to represent is "profitability to our industry,"

Petrone said:

"Unfortunately, as business has moved from high-flying prosperity into highly-competitive conditions, many in this industry have learned that there is no guaranteed profit in business.

"Too many of us may have forgotten even the fundamentals of how to go about assuring a profit. They can be best summarized in three single points:

"First, build-in a sound gross profit.

"Analyze your price structure to make certain your in-

take exceeds manufacturing expenses and cost of sales. Thinking in terms of profit means you will have built-in profit insurance without regard to the out-

side elements that all too often are used as an excuse for lack of profit.

"Secondly, don't kill your profit.

"You can kill profit by simply spending more for sales than you take in, so let's take a closer look at this area and develop closer control of expenses. Find ways to reduce costs—not kill profits; avoid unrealistic price cutting which is unrelated to costs.

"If, for example, you're working on a 25% gross profit margin and you cut your price to 10% to sustain a so-called competitive position, remember you'll need 67% additional volume to make the same profit.

"Thirdly, stick to accurate sales forecasting.

"Conservative, realistic sales forecasting is a cardinal rule of profitable operation. Too often wild forecasting based on guesswork or wishful thinking rather than on historical performance and sober analysis has resulted in overproduction which cannot help but eat into profit. I firmly believe that nearly every evil that has bedeviled this industry in recent years is directly traceable to inaccurate forecasting.

"Those are the three rules. It's easy to say there will be a bright new tomorrow when every new home and building will be air conditioned and when space travel and other scientific advances will depend upon the contributions made by our industry.

"But we must deal with the realities of our present time. We must learn how to make a profit in this business based on today's economy and today's facts of life.

"Our industry is now in somewhat the same position as the motorist who lost his way and stopped at a crossroads to ask advice from a passing farmer.

"The farmer pointed in one direction, hesitated, then pointed in the opposite direction. After scratching his head thoughtfully for a full minute, he finally turned to the motorist and said: 'Mister, if you want to go there, you really shouldn't start from here.'

"Perhaps this industry shouldn't start from here either, but here is where we are, and I say the most effective way of getting us where we want to go is by first assuring ourselves of the means and the incentive for the trip."

Trion's Portable Laboratory

TRION, INC., McKees Rocks, Pa., manufacturer of electronic air cleaning equipment, is offering a new service to the air conditioning industry. The company will soon send its new mobile laboratory on a nationwide tour, with stops scheduled in all major cities. Its facilities include air testing equipment that duplicates that used by the National Bureau of Standards, and a visual tester for showing the actual filtering efficiency of all types of filters, mechanical and electrostatic. All equipment is portable and may be used in locations other than in the mobile laboratory, according to Trion.



Operating Costs of Residential Air Conditioning and What This Means to Dealers and Installers. By R. A. Gonzales—25¢ each.

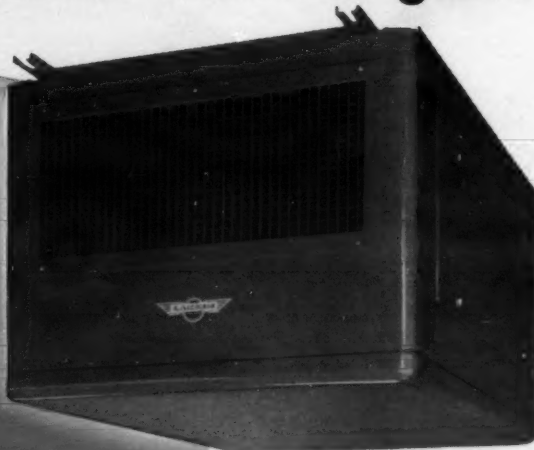
Get your copy

Mail this ad with your name and address to: Air Conditioning & Refrigeration News, 450 W. Fort St., Detroit 26, Mich.

Low Installation Cost! Low Price! Long Life!

**CHOOSE THE
LARKIN
(YEAR 'ROUND)
AIR CONDITIONER**

5 MODELS—2 TO 10 TONS



Ideal for:

**STORES BARS
SHOPS GRILLS
OFFICES RESTAURANTS
BAKERIES FLORISTS
CLINICS**

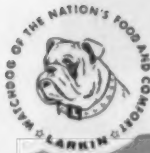
**Cools or heats • De-humidifies
Filters • Circulates Air**

Here is Larkin's answer to the ever-increasing demand for year-round comfort conditioners. When you see it . . . when you compare it . . . when you price it . . . then you will understand why we say it is another triumph for Larkin—manufacturer of air-conditioning equipment for nearly 25 years.

See your wholesaler today for complete information about the all-new Larkin Comfort Conditioner. Write us for the name of the one nearest you—or for descriptive literature.

FEATURES THAT SELL AND SATISFY

- Larkin air-conditioning coil—eight fins per inch, continuous fin, staggered tubes, for highest efficiency and lowest operating cost
- Compact cabinet, all-steel, rust-resistant, beautifully finished with baked-on enamel
- Fiber-glass insulation
- Pressure-type, centrifugal, dynamically balanced, forward curved fan wheels
- Frictionless, self-aligning bearings completely encased in Neoprene
- Resilient base motors on adjustable mounts
- Two-direction, adjustable discharge grille
- Easily removed, throw-away filters
- Heating coils for use with steam or hot water
- Slotted hanger bars
- Easily installed, easy to service
- Backed by the engineering skill and manufacturing reputation of Larkin Coils—one of America's leading makers of commercial and industrial refrigeration and air-conditioning equipment



"Originators of the Cross Fin Coil"

LARKIN COILS INC.

519 MEMORIAL DRIVE, S.E., ATLANTA, GEORGIA

For Flexibility on a Budget

Single Air Conditioner Cools 2 Rooms In Circular Valley Presbyterian Hospital



LOS ANGELES — Maximum air conditioning flexibility at budget cost is what the new Valley Presbyterian hospital in San Fernando Valley needed and got from Air-Master, Inc., air conditioning contractor.

S. C. Scott, Jr., president of Air-Master, said that hospital authorities could not afford, under their budget, an individual air conditioning unit in each patient's room of the 66-bed nursing unit recently completed.

"The maximum flexibility under the budget would have been two-zone, or possibly three-zone air conditioning for the entire nursing unit."

To circumvent this problem, Pereira & Luckman, mechanical engineer and architect on the project, located a single unit air conditioner in the circular corridor ceiling above each two adjoining rooms.

From these 21 individual units, 10 ft. of ducting extended to grille outlets. This method, according to Scott, enabled any two rooms to have any particular temperature needed. It also afforded greater flexibility.

The units employed were Drayer-Hanson "Spotair-HRC" models of various capacities. The ceiling suspended units are matched with a 50-ton York compressor and to a boiler unit for the heating phase. Auxiliary equipment is located in a penthouse atop the three-story circular structure. A Marley cooling tower is also roof-mounted.

Larger public space areas are

supplied with air conditioning by systems built up on the job by Air-Master, Scott further indicated.

Steed Bros., Los Angeles, is project contractor.

The entire nursing unit is circular designed to save walking distance for nurses and aides serving patients, according to Pereira & Luckman. Patients' rooms are on the outer perimeter. They are separated from nurses' stations by a circular corridor.

HOW TWO ROOMS are cooled with a single air handling unit by means of 10-ft. ducts extending from ceiling mounted unit air conditioner is shown in this construction shot. Grille faces into patient's room from furred down ceiling of circular corridor.

Commercial Air Conditioning

Story In Brief

The Job: Valley Presbyterian Hospital.

Location: San Fernando Valley, Calif.

The Goal: Low-cost multi-zone control.

Problems: Budget did not allow individual room cooling units or controls.

Solution: Individual fan-coil-filter units to cool, heat two rooms hooked to central compressor.

Equipment Used: Drayer-Hanson fan-coil-filter units, York 50-ton compressor, Marley cooling tower.

Air Conditioning Contractor: Air-Master, Inc., Monterey Park, Calif.

having to turn corners. Circulation in this unit is approximately 60% less than in the normal rectangular or T-shape plan, Pereira & Luckman said.

Layout of the hospital is such that a 200-bed addition, already planned, can be attached without abandoning or ripping out existing facilities.

MORE THAN 250 "HEAVYWEIGHTS"



Elbows, tees and nuts are forged for greater strength . . . with extra wall thickness. Larger wrench flats mean faster, neater installations.



Three seals block leakage. Single seal on conventional fitting gives only one-third the protection against leakage.



Order TRIPLE-SEAL fittings today from your jobber. Or write for Catalog No. 81

IMPERIAL fittings give you TRIPLE-SEAL protection

Imperial TRIPLE-SEAL flared tube fittings give you the most complete protection against leakage in the field. More than 250 individual types and sizes for scores of profitable applications!

Once you try these heavyweight, refrigeration-quality, time- and work-savers — you'll never be satisfied with conventional single-seal fittings. Long, Dryseal pipe threads give you extra insurance for tighter joints . . . provide the extra length for positive take-up whenever re-connected. Heavy forged brass bodies on elbows, tees and nuts are absolutely non-porous to refrigerant seepage. You get generous wrench flats and hexes plus plastic protectors on flare seats!

It's all in the groove! When flare nut is drawn up, the copper tubing is forced into groove as well as against the two faces of the seat, making a leakproof triple-seal joint—even though face of seat is nicked or marred.

IMPERIAL

THE IMPERIAL BRASS MFG. CO.
6300 W. Howard St., Chicago 31, Ill., Dept. ACR-68

In Canada: 18 Hook Ave., Toronto, Ontario

FITTINGS • VALVES • DRIERS • CHARGING LINES • TOOLS for Cutting • Flaring • Bending • Pinch-Off • Swaging

Emblem of Quality



June 12 IHACI Meeting To Discuss Heat Pumps

LOS ANGELES — The heat pump will be the subject of discussion at the June 12 meeting of the Institute of Heating & Air Conditioning Industries.

Southern California Edison Co. and the Los Angeles Dept. of Water & Power will co-host the dinner meeting to be held at the Rodger Young Auditorium, 936 W. Washington Blvd. here, starting at 6 p.m. The meeting is open to all industry representatives.

Principal speaker will be B. M. Osborn, a registered engineer retained by utilities to conduct field studies on heat pump costs. He will analyze the growing popularity of heat pumps, present operating data, and touch on technical aspects.

Air Conditioning Helps Maintain Maximum Accuracy at Army Map Service Field Office

Expansion, Contraction, Sweat, Toxic Fumes Among Problems Licked

KANSAS CITY, Mo. — Since the utmost accuracy is required in present-day map making, the lack of temperature and humidity control at the Kansas City field office caused continuing problems of registration of companion drawings for the Army Map Service.

Army Map Service is responsible for preparation of foreign and domestic maps in various scales primarily for military usage.

Materials most commonly

The Job: Warehouse structure used for army map making.

The Goal: Increase efficiency and comfort of workers.

The Problems: High humidity, inadequate exhausting of toxic fumes, poor air circulation, uneven heating.

The Solution: Install industrial type air conditioning system for year-round temperature and humidity control.

Equipment Used: Two 100-ton Trane "CenTraVac" hermetic centrifugal refrigeration units.

Air Conditioning Contractor: A. D. Jacobson Plumbing and Heating Co., Kansas City, Mo.

worked with are paper, plastic, and film, all of which have a high coefficient of expansion under varying conditions of temperature and humidity.

AMS moved to its present location on the Kansas City Records post in September, 1954. Its 230 employees occupy 38,000 sq. ft. of space on the first floor of a large two-story brick building which was constructed primarily for warehouse use.

Problems Were Many Without Air Conditioning

Prior to the summer of 1957, fans provided the only air circulation and ventilation during the hot summer months. During the winter, heating was accomplished by a combination of steam radiators and overhead heating ducts connected to blower-type unit heaters.

In addition to the expansion and contraction of map mate-

rials, the lack of air conditioning had other undesirable effects, such as:

1) The frequently high humidity and temperature during the summer months caused draftsmen's hands to perspire. This made it difficult for them to work on the plastic materials without sticking to them and marring the completed proportions.

2) Inadequate exhausting of toxic fumes in the photographic laboratory and excessive heat from the lab arc lights presented a health problem to the employees working there. Exhaust fans used in the lab were only partially successful since their design had to permit air movement while completely eliminating light.

3) A large percentage of the mapping performed here is new mapping by photogrammetric methods. This operation is performed in individual semi-darkened rooms approximately 100 sq. ft. in area.

Air circulation in these rooms was inadequate, even during winter months, in spite of numerous fans.

In the heat of summer, the heat which is generated by the mapping instruments made it impossible to withstand the confinement and heat of the rooms for very long periods of time.

4) During the winter months, the warehouse type of heating brought frequent complaints from areas which were either too hot or too cold. Uniform heating was never attained in spite of increased controls and the addition of small space heaters in remote areas.

Industrial Type System Proved Solution to All

All of the above problems were solved by the installation of an industrial type air conditioning system which provides year-round temperature and humidity control. Under design conditions, temperature is controlled at $\pm 1^\circ$ and relative humidity is controlled at $\pm 2\%$.

A centrally located control and equipment room on the second floor of the AMS building houses two 100-ton Trane "CenTraVac" hermetic centrifugal refrigeration units connected in series, plus chilled water pumps and fully automatic controls.

Series counterflow is the most economical arrangement that can be employed for multiple machine installations, Trane claims. Not only do the condenser and chilled water systems pass through both machines in series, but the flow direction of the machines is opposite, hence the reference to counter-flow.

The engineering reasons for the advantage of this arrangement are the same as those which make it possible to obtain maximum coil performance from counterflow as opposed to

SPECIFY • INSTALL

ALCO SOLENOID VALVES

— for trouble-free performance . . .
for every refrigerant control application

LIQUID • SUCTION • HOT GAS
BRINE • WATER • STEAM • AIR

Compact • Constructed for hermetic and non-hermetic applications • Come apart quickly for cleaning and servicing • Manufactured of the best grades of corrosion-resistant materials • Cool, high-powered coil — moisture-proof impregnated — manufactured by Alco to Alco's high precision standards. Positive closing with pressure-tested seating for positive shut-off • Wide variety of types, sizes, connections.

Call your Alco wholesaler.
Write for Specifications Bulletin No. 173-55

ALCO VALVE CO.
853 KINGSLAND AVE. • ST. LOUIS 5, MO.

• BUY SECURITY
• BUY QUALITY
• BUY ALCO

7803

The one complete line of refrigerant controls: Thermostatic Expansion Valves • Refrigerant Distributors
Solenoid Valves • Suction Line Regulators • Flooded Evaporator Controls and Reversing Valves



Safely supports hanging pipes, conduits and cables up to 500 lbs. $\frac{3}{4}$ in. 20 gauge electro-galvanized steel. $\frac{1}{4}$ in. holes on $\frac{1}{2}$ in. centers. Various lengths available. Send for literature.

MINERALLAC ELECTRIC COMPANY
25 N. PEORIA ST. • CHICAGO 7, ILL.

crossflow or parallel flow, Trane said.

Water from a cooling tower on the roof is circulated through the CenTraVacs to cool the condensers. Water leaves the CenTraVacs at 42° F. and is pumped to nine separate zone air handling units which contain chilled water cooling coils and steam reheat coils.

Humidity is added in winter by steam jet humidifiers. All units are served with outdoor air from a single source. The outdoor air is brought in through an electrostatic filter (and a bank of pre-heat coils in winter).

Steam for winter heat and for increased humidity, as required, is provided through steam lines which emanate from the post heating plant in another building. Steam requirements for summer operation are provided by a separate 100-hp. boiler also located in the post heating plant.

Temperature and humidity are pneumatically controlled. Humidity is regulated through wet and dry-bulb readings at 11 strategically located psychrometric stations. Temperature is regulated through the use of pneumatic thermostats located in each zone.

Production Gain Noted

Although it is impossible to compute accurately any savings as a result of air conditioning at this early date, Harold E. Schreiber, Chief of the Kansas City Office of the Army Map Service, said, "It is safe to state that a production gain of 25% will be realized during the summer months and about the same savings in materials should be noted on a year-round basis."

The system was designed by the Chief of the General Services and Utilities Div. of the Army Map Service, Washington, D. C., and installed by the A. D. Jacobson Plumbing and Heating Co. of Kansas City, Mo. The installation was supervised by William E. Hill, assistant post engineer, on behalf of the government.

June Outings Set By 4 ARW Regions

DETROIT—June outings are being planned by four regional organizations of the Air-Conditioning & Refrigeration Wholesalers.

Region 5 will hold its annual spring meeting June 22 to 25 at the Bedford Springs hotel in Bedford Springs, Pa. Role of the wholesaler and manufacturer in relation to the recession will be a prime topic of discussion.

Regions 6 and 7 will combine in a joint golf outing at French Lick, Ind. on June 19 and 20. Manufacturers and wholesalers will meet together for business Thursday evening and then will spend Friday golfing, cocktailing, and banqueting. French Lick-Sheraton hotel is the site of the outing.

Region 8 plans a similar program for June 12 and 13 at the Ancira hotel in Monterrey, Mexico.

Both manufacturers and wholesalers are invited to bring wives and children on this jaunt south of the border.

Air Conditioning Helps Keep Electronic Parts Dust Free

MONTREAL, Que., Can.—An area at Northern Electric Co. Ltd.'s plant here has been fully air conditioned and set apart for the manufacture of electronic tubes, dry reed switches, and other electronic components of telephone carrier equipment.

In this air conditioned area employees are required to wear nylon smocks or shirts—visitors

must also don the nylon garments, according to *Northern Circuit*, plant publication.

The firm has set up 10 "commandments" to keep the area free of dust and dirt. Known as "Snow White," the area has double-sealed windows and special curtains cut out extra light and sun heat, it is further explained.

In order to turn out satisfactory vacuum tubes with long life expectancy, it was explained, the dust count in the assembly area should be kept below 500 so the area is 30 times as clean as normal good housekeeping practice would dictate. The air conditioning system helps maintain this cleanliness.

ARI Book Points Up Essentiality of Refrigeration, Cooling

WASHINGTON, D. C.—The air conditioning and refrigeration industry last year produced equipment valued at more than \$600 million at the factory, a new book published by the Air-Conditioning & Refrigeration Institute reports.

The profusely-illustrated volume is titled "Air Conditioning and Refrigeration—Essential to

our Nation's Health, Productivity, Defense."

In 32 pages, it represents a survey of the role the industry plays in the national economy.

It states that this industry of ours includes some 600 plants and factories accounting for the direct employment of more than a half million people.

In addition there are an esti-

mated 100,000 Americans engaged in distributing, servicing, and maintaining the equipment.

First 18 pages are devoted to air conditioning, describing applications in industry, business, health, home, and defense.

The last 14 pages tell of refrigeration and the nation's food supply, health in industry, and in defense.

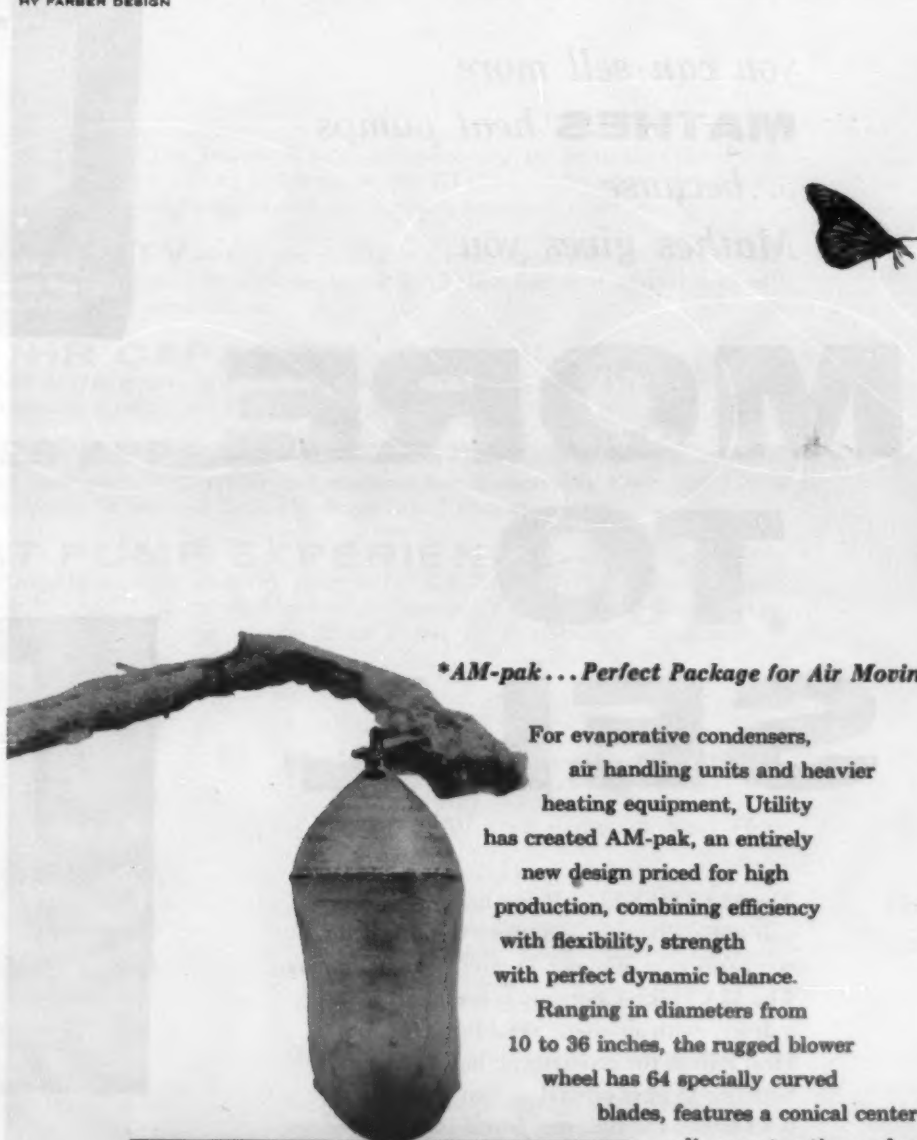
Seek To Centralize Maintenance Inspection Activities In N.Y.

NEW YORK CITY—Bernard J. Gillroy, buildings commissioner of this city, has declared, "All maintenance inspectors of various city departments should be centralized in a single department—the Department of Licenses."

Outlining his ideas, Gillroy drew a line of distinction between highly-trained specialists in such fields as iron and steelwork, who must approve new construction, and maintenance inspectors whose job it is to make periodic checkups later.

Recently Edward F. Cavanagh, Jr., fire commissioner, also called for a new Department of Inspection to centralize control of more than 3,000 field men of eight departments.

HY FARMER DESIGN



*AM-pak... Perfect Package for Air Moving Units

For evaporative condensers, air handling units and heavier heating equipment, Utility has created AM-pak, an entirely new design priced for high production, combining efficiency with flexibility, strength with perfect dynamic balance.

Ranging in diameters from 10 to 36 inches, the rugged blower wheel has 64 specially curved

blades, features a conical center

disc construction and operates at static pressures up to 6 1/4" W.G.

You deliver greater air-power with less horse-power when your equipment is built with AM-pak.

Scroll shapes and wheel diameters can be matched to your exact needs. Let us send you complete data.



UTILITY FAN CORPORATION

911 East 59th Street, Los Angeles 1.
International Division, 141 El Camino Drive,
Beverly Hills, California. A division of
Utility Appliance Corp.

*Air Moving Package.





AROUND THE WORLD IN 50 DAYS

"Inside Dope" by GEORGE F. TAUBENECK



(Concluded from Page 1, Col. 1)

The Siamese have a love of order and beauty, as evidenced by their symmetrical farm plots, their richly-hued temples and colorful clothing.

They like air conditioning, too. Nearly all Government and office buildings, theaters, and palaces are air conditioned, as is the excellent Erawan hotel.

Residential air conditioning is gaining rapid acceptance, too, according to C. H. Hwa and E. M. Chu of Yip In Tsoi & Co. (Chrysler Airtemp). Window and through-the-wall units are employed exclusively in home air conditioning.

C. P. Beattie, managing director of Loxley Air Conditioning & Refrigeration Co. (Carrier), met us at the airport. Although his firm has enjoyed excellent business for many years, he did mention a few handicaps:

- (1) A chronic electrical power shortage.
- (2) Interest rates on commercial loans ranging from 15% (official) to 18% (actual).
- (3) Electric power charges range from 5 cents per kwh. in Bangkok to 15 cents per kwh. "out country."
- (4) Thailand is supposed to be a democracy; actually it is a military dictatorship—much like some Latin American countries.
- (5) Approximately 85% of the people are farmers—and 80% of the farmers own their own land.

Pravitt Uwatha of the Uwatha Phantit Co. (York) and Konrad Wurr of Belgo-Thai Agencies (Westinghouse) showed us why Siam has a chronic electric power shortage. All steam-generating plants, like the railroad locomotives, burn wood. . . . No coal, no oil is present, you see, in Thailand.

Hop-Skip-and-Jumps

Although Amen Hazien of Sungreen & Co. (Chrysler), Ret Singen of Mushko & Co. (Remington), and Homi Mehta of Karachi Radio Co. (Philco) comprised a greeting committee, we got the hell out of Karachi (Pakistan) quickly.

Cholera epidemic.

Same deal at Tehran. From the sky looking downward, and at the airport looking outward. Tehran is a modern version of an Arabian Nights theatrical set.

Nestled against bluish-purple mountains are medieval quadrangles and courtyards, battlements and castles, interspersed with gardens. But they wouldn't let us leave the hermetically sealed airport to go investigate.

Saw Athens from the air, too, for the same reason. Greece is deathly afraid of potential cholera carriers, and we hadn't had that particular needle.

Fortunately, the plane circled low and slowly over the Parthenon on a sunny clear-sky day.

We must have put the whammy on Beirut. Shortly before

our arrival it was considered to be the most America-oriented of all Eastern cities, and Lebanon the safest nation for American investments.

Supplanting Cairo and other troubled spots, Lebanon had become wholesale headquarters for American exporters of air conditioning and refrigeration equipment.

We had more than a dozen men on our list here, but they weren't home. Seems there was a revolution, or an insurrection, or something. . . .

To a casual visitor like "Dope" this atmosphere of crisis was unreal. Stores and office buildings were shuttered; otherwise, no evidence of disturbance.

Lebanon's expensive hotels

(\$30 a day and up) were doing business as usual. . . sunbathers, afternoon tea, evening dansants, multicourse dinners, plentiful taxicabs. . . .

Beirut is a truly lovely city, resort-type and that's about all we can report.

Everything But Coffee

There are 164 American citizens jailed in Istanbul for "insulting the Turkish Government."

Most of them are exasperated G.I.'s from the nearby airbase which is daggered toward Moscow. However, a surprising number are American tourists who merely wanted a morning cup of coffee.

Coffee, which the Turks introduced into Europe and the Western World, simply isn't available in Turkey any more. Reason: no foreign exchange.

Whisky, soap, cigarettes, canned and frozen foods, automobiles . . . even toilet paper and aspirin . . . can't be imported into glamorous old Istanbul because Turkish exports have fallen off to the zero point.

Greece, you see, sells Turkish-type tobacco cheaper nowadays than the Turks themselves. Not even in the modernistic Conrad Hilton hotel in Istanbul—where rooms and meals add up to \$44 a day minimum—can you get coffee or other "trifles" which Americans consider "necessities of life" when they can't get them.

No wonder 164 have "blown their tops" and wound up in Istanbul jails. Obviously, little or no American refrigeration and air conditioning equipment

can cross Turkey's borders.

Still retaining their American connections, however, are: S. Sunguroglu (Dunham-Bush and General Electric); S. Layiktef of Helios Elektrik (Frigidaire); plus T. Karakarash, Saul Anilt, and Ahm Onti of Tokar Ltd. (Carrier).

The Turks are a proud people, and they are less frightened by the Communist Conspiracy than any other people on earth. As a Professor of Political Economy (who drives a taxi at night) explained:

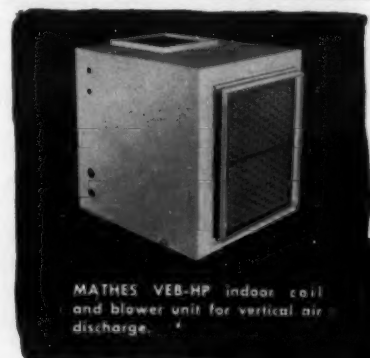
"For more than 300 years we've backed up against Russia geographically and politically. We know them like the backs of our hands. They're bluffers. Thirty times they've threatened Turkey's border. Each time we've called their bluff they've backed away. Ptooeey. . . !"

At another time we may mention the toilet facilities, and the night we wound up in a parade.

you can sell more
MATHES heat pumps
...because
Mathes gives you

MORE TO SELL

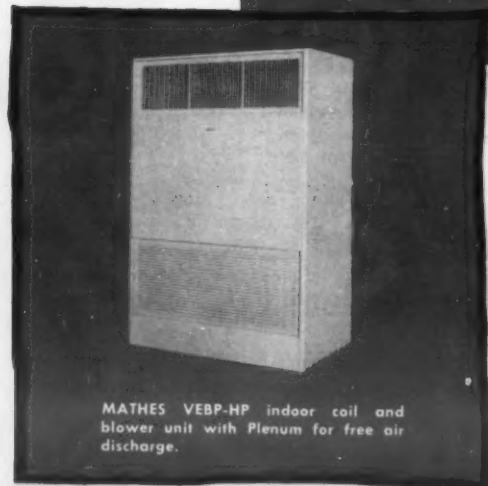
The MATHES Heat Pump line offers you today's biggest opportunity for outselling competition in Summer-Winter air conditioning. The MATHES Company is leading the industry with air-to-air SPLIT SYSTEM Heat Pumps for economical, highly adaptable Summer-Winter central air conditioning for both homes and business. It will pay you to investigate the unique profit opportunities in a MATHES franchise.



MATHES VEB-HP indoor coil and blower unit for vertical air discharge.



MATHES HEB-HP indoor coil and blower unit for horizontal air discharge.



MATHES VEBP-HP indoor coil and blower unit with Plenum for free air discharge.

The MATHES Split System Heat Pump is adaptable to virtually every building requirement. The HEB-HP unit containing the compressor, outdoor coil, reversing valve and related controls, is installed outdoors in any convenient location.

The companion indoor central unit containing the coil and blower may be located in the attic, basement, closet, storage room, crawl space under the floor, or wherever the building plan requires. Handsome indoor units may also be installed in any room to provide free air discharge without use of duct work.



Heating and Air Conditioning

Dealer Research Group Seeks To Cut Costs, Improve Profits

RALEIGH, N. C.—Organized with the intention of studying dealer costs and improving management methods and profits, the Heating and Air Conditioning Research and Development Association here has hopes it may become national in scope.

Present membership, which numbers less than 100, is headed by M. J. Zett, president; Wm. H. Fowler, vice president; D. S. Shepherd, Jr., treasurer; and Dr. E. A. Fails of North Carolina State college, executive secretary and director of research.

The association was chartered as a non-profit corporation under North Carolina laws in October of last year.

"During 1957 10 firms were studied and their operations analyzed to produce vital information necessary to determine procedures for strengthening weak spots, simplifying bidding and record-keeping, and forming a basis for measuring the effect of corrective measures," Fails explains.

"The association's standard bookkeeping system was installed in several of these firms, and methods of determining overhead and job costs as recommended by the research staff were adopted," he said.

"After operating for six months using the association system and methods, the results were compared with their 1956

financial statements. It was ascertained that firms using this system increased their net profits by 3.42% of sales," commented Fails.

"Of course, when this news leaked out, the results were astounding," he adds. "Inquiries began coming in from all over the state and some from as far west as California."

Objectives of the association, as set forth in its charter, include:

A. A continuous research program to:

(1) Determine average costs for various types of jobs, pro-

cesses, and fabrications;

(2) Establish standard and accurate methods of predetermining overhead costs and applying these costs as a part of the total cost of the job;

(3) Develop a standard system of record keeping which will yield the best possible information for management use.

B. A monthly reporting service designed to:

(1) Keep members informed as to average direct and overhead costs for the industry;

(2) Reveal "hidden costs" and many saving techniques.

(3) Provide a means of

HEADING new Heating and Air Conditioning Research and Development Association are M. J. Zett (right) president; W. H. Fowler (left) vice president; D. S. Shepherd, Jr., treasurer; and Dr. E. A. Fails, executive secretary and director of research.



Residential Air Conditioning

sharing technical know-how among dealers in the industry.

(4) Make available to members the results of the continuous research program.

C. A management education program designed to:

(1) Assist management in interpretation of financial statement;

(2) Inform management as to how financial statements can be used as a profit-production tool;

(3) Discourage "guess-timating as a means of determining job costs."

Annual dues in the association have been set at \$25 for "primary" (voting) members, who are limited to retail heating and air conditioning dealers and contractors; \$100 for "associate" (non-voting) members consisting of manufacturers, wholesalers, etc.; and \$10 for "individual" (non-voting) members.

In return, members will receive monthly bulletins on the association's cost and management investigations, and will be entitled to purchase standardized systems, records, forms, or a uniform system of accounts, and will have available at additional cost a research staff for specific studies or continuous consulting and advisory service.

MORE MODELS--The industry's most complete line of air-to-air Heat Pump equipment. More than 75 models -- from 22,500 to 116,000 BTU/hr cooling-heating capacity. MATHES has Split System Heat Pumps in sizes not available from any other source.

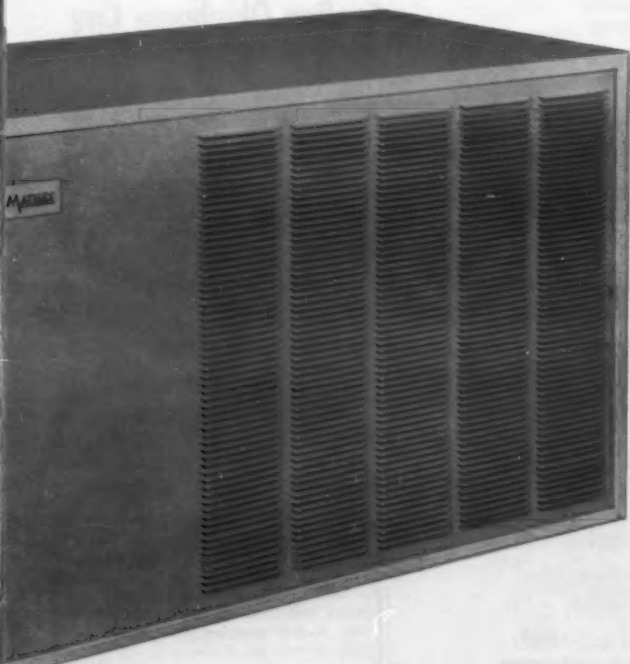
MORE FLEXIBILITY--You can profitably handle residential jobs of EVERY size and a majority of commercial jobs with the broad MATHES line. It is adaptable to any building design, every type of construction.

MORE BTU/HR CAPACITY--PER DOLLAR COST. You can out-bid competition and deliver quality at a profit, because MATHES Heat Pumps are engineered for high capacity cooling and heating, built for long service and economy.

MORE SALES APPEAL--A MATHES Heat Pump installation is attractive in appearance and quiet, economical, and attention-free in operation. Every MATHES unit is finished in Alpine White and Buckskin Beige baked enamel.

MORE HEAT PUMP EXPERIENCE--There are more MATHES Heat Pumps in use today than any other make. MATHES offers you the *only* Split System Heat Pump having UL approval. The Mathes Company's experience in design, engineering, and manufacturing of year around Heat Pump air conditioning equipment is unmatched by any other firm.

The MATHES HAR-HP outdoor unit is fully enclosed in a safe, attractive, weatherproof steel cabinet.



Make Money with MATHES the Complete Line

- + Summer-Winter Remote System Heat Pumps
- + Cooling Remote Systems with gas furnaces
- + Self-Contained Package Units for Summer-Winter air conditioning or for cooling only
- + Add-on Cooling Units adaptable to many types of furnaces
- + Store Cooler Package Units--for duct work or free air discharge
- + Room Air Conditioners -- cooling only and heat pump

For prompt information on the MATHES sales program and opportunities open for distributorships and dealerships write to The Mathes Company, Commercial Sales Division, 1501 East Broadway Ave., Fort Worth 5, Texas.

Symbol of Excellence in Summer-Winter Air Conditioning



The **MATHES** Company

Division of Glen Alden Corporation

1501 East Broadway Avenue • Fort Worth 5, Texas

100 Newspaper Ads Stress Heat Pump In Tampa Campaign

TAMPA, Fla.—An even 100 large newspaper advertisements stressing the advantages of heat pump cooling and heating are a key phase of the Tampa Electric Co.'s "Operation Heat Pump" now under way.

The utility is pressing heavily during May, June, and July on the theme "Sell the All-Electric Heat Pump as the Key to Electric Living."

Besides its newspaper advertising program, the utility is taking to radio, billboards, trade papers, and direct mail to whet consumer appetite.

One colorful folder presents actual operating costs on 22 residential heat pump installations in its territory, covering one and two year periods. This folder will be mailed free to 3,000 prospects for an individual contractor, the utility said.

In addition to these consumer promotions, Tampa Electric has offered heat pump contractors and their salesmen a cash bonus of \$2 per horsepower of central heat pumps installed.

It is also conducting training courses for contractors, its own personnel and home economists, and professional groups.

Though extra stress is being placed on heat pumps during "Operation Heat Pump," the utility's promotion of the product continues year around, according to Gilbert D. Leach, Jr., heating and air conditioning engineer for Tampa Electric Co.

For Your Reprint Copy

"Emergency Diagnosis, Repair of Hermetic Unit Electric Components," by John L. Zant, mail this ad with your name and address to: Air Conditioning & Refrigeration News, 430 W. Fort, Detroit 26, Mich.

Only 25¢ each.

With Central Systems

More Than 40% of Space In New York Office Bldgs. To Be Cooled by Summer

NEW YORK CITY — More than 40% of the office space in major office buildings here will be made comfortable this summer by central, full-building air conditioning systems, Albert Baum of Jaros, Baum & Bolles, prominent consulting engineering firm, reported recently in the *New York Herald Tribune*.

In a study based on construction and air conditioning installations in the period since World War II, Baum estimated that buildings in the Manhattan business districts alone account for over 33,000,000 sq. ft. of rentable space which is being

served by central systems. With thousands of offices in other buildings rendered habitable by self-contained or packaged systems serving all or part of a single floor, and other offices cooled by room air conditioners, Baum declared that New York City may well be the most thoroughly air conditioned city in the world after Dallas and Houston.

Altogether, he pointed out, there are approximately 5,000,000 sq. ft. of additional office space air conditioned by full-building systems since last summer.

By the summer of 1959, he predicted, there will be an additional 7,000,000 sq. ft. of centrally air conditioned office space in buildings yet to be completed.

Baum, whose firm has designed the air conditioning installations for many of the outstanding new buildings of the past decade, pointed out that all major new construction provides for central air conditioning.

As a result, an increasing number of older buildings are adding the same service to retain Class I ratings.

Mezzanine-Installed Packaged Units Need No Ductwork To Cool Dept. Store

NEW YORK CITY—Recently, Billen Engineering here installed 90 tons of air conditioning equipment designed to satisfactorily condition the main floor of Blumstein's Department Store, 230 W. 125 St.

Other firms called in on the job claimed that the installation could not be satisfactory without ductwork running throughout the store. Blumstein was extremely reluctant to do the job on that basis, since the store had been recently remodeled.

Billen Engineering was called in to determine if it were feasible to install a suitable system without the benefit of ductwork.

William Eden of Billen En-

gineering claimed that ductwork could be eliminated by placing the equipment on the mezzanine. The design was checked by Ray Garramone, Billen's chief engineer, who concurred with Eden.

On that basis Eden guaranteed the job and the contract was written up with the provision that if it were not satisfactory, Billen Engineers would install the necessary ductwork at no expense to Blumstein's. The cost of the sheet metal work would have amounted to approximately \$6,000.

When the equipment was started up it was found to be more than adequate. The Typhoon equipment used on the job was able to distribute the conditioned air 110 ft. from location instead of the 70 ft. calculated originally by Eden.

Three 20-ton and one 30-ton Typhoon units were installed.

Empire State Bldg. Continues Cooling Program Begun In '56

ST. LOUIS — Under an air conditioning program inaugurated in 1956, a comfortable working atmosphere is being provided for 25,000 tenants of New York City's Empire State building, according to Marlo Coil Co. here.

Marlo central station air conditioning units are being installed in the latest phase of the mammoth 5,250-ton cooling project, the company said. One hundred and twenty Marlo ceiling type units of varying capacities are being installed in suspended-acoustic ceilings for concealed comfort conditioning.

Consulting engineer for the Marlo installation was the firm of Edward E. Ashley, and among air conditioning contractors are: Kennedy-Scheidel & Young; Riggs Distler & Co., Inc.; Almirall & Co., Inc.; Wolff & Munier, Inc.; and Thermodyne Corp., all of New York.

Contract Awarded for Cooling Oklahoma City Federal Building

OKLAHOMA CITY — A contract for air conditioning and re-lighting of the Federal building on NW 3 has been let to Kay Engineering Co., 220 NE 38, according to word received here from U. S. Senator Robert S. Kerr's office in Washington, D. C.

Total cost of the contract was reported to be \$634,947. Completion date is Feb. 21, 1959.

The improvements will tie in mechanically with comparable facilities to be installed in the new federal building to be built adjacent to the old structure.

For Your Reprint Copy

"Emergency Diagnosis, Repair of Hermetic Unit Electric Components," by John L. Zant, mail this ad with your name and address to: Air Conditioning & Refrigeration News, 450 W. Fort, Detroit 26, Mich.

Only 25¢ each.

You can count on
HIGHER PROFITS

WITH

Curtis

AIR CONDITIONERS

HERE'S WHY...

MAXIMUM DEPENDABILITY

Each CURTIS unit is backed by 104 years of engineering and manufacturing experience... one of many reasons why CURTIS air conditioning equipment operates at maximum efficiency with a minimum of maintenance.

CUSTOMER SATISFACTION

The long operational life and minimum service requirements of CURTIS air conditioning, combined with peak performance, assures satisfied customers.

PRE-SOLD PROSPECTS

National advertising beamed at virtually every prospect category helps pre-sell Curtis equipment for you. CURTIS provides sales and promotional aids to make your selling job easier.

PRICED FOR PROFITS

All Curtis air conditioning equipment is competitively priced, with a very generous profit margin for you!

REMEMBER—
you can count on

Curtis

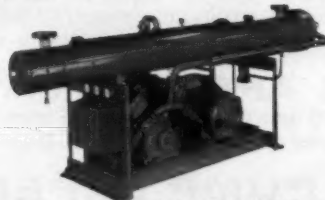
OUR 104th YEAR
MANUFACTURING COMPANY • REFRIGERATION DIVISION
1912 Kienlen Ave., St. Louis 20, Mo.

C-35

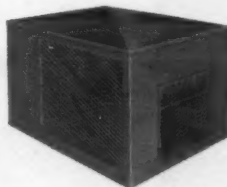
Represented in Canada by—T. M. Hall Ltd., 30 Milner St., Montreal West 26, P.Q., Canada



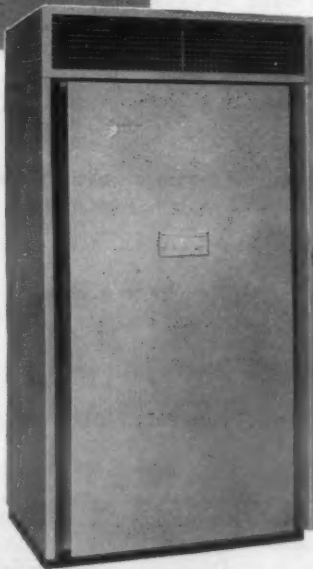
Evaporative Condensers and Cooling Towers up to 100 tons Air handling units to match.



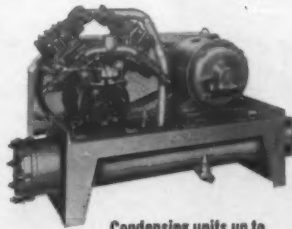
Packaged Liquid Chillers—7½ to 100 tons—F-12 or F-22. With room console units to provide controlled cooling and heating without duct work.



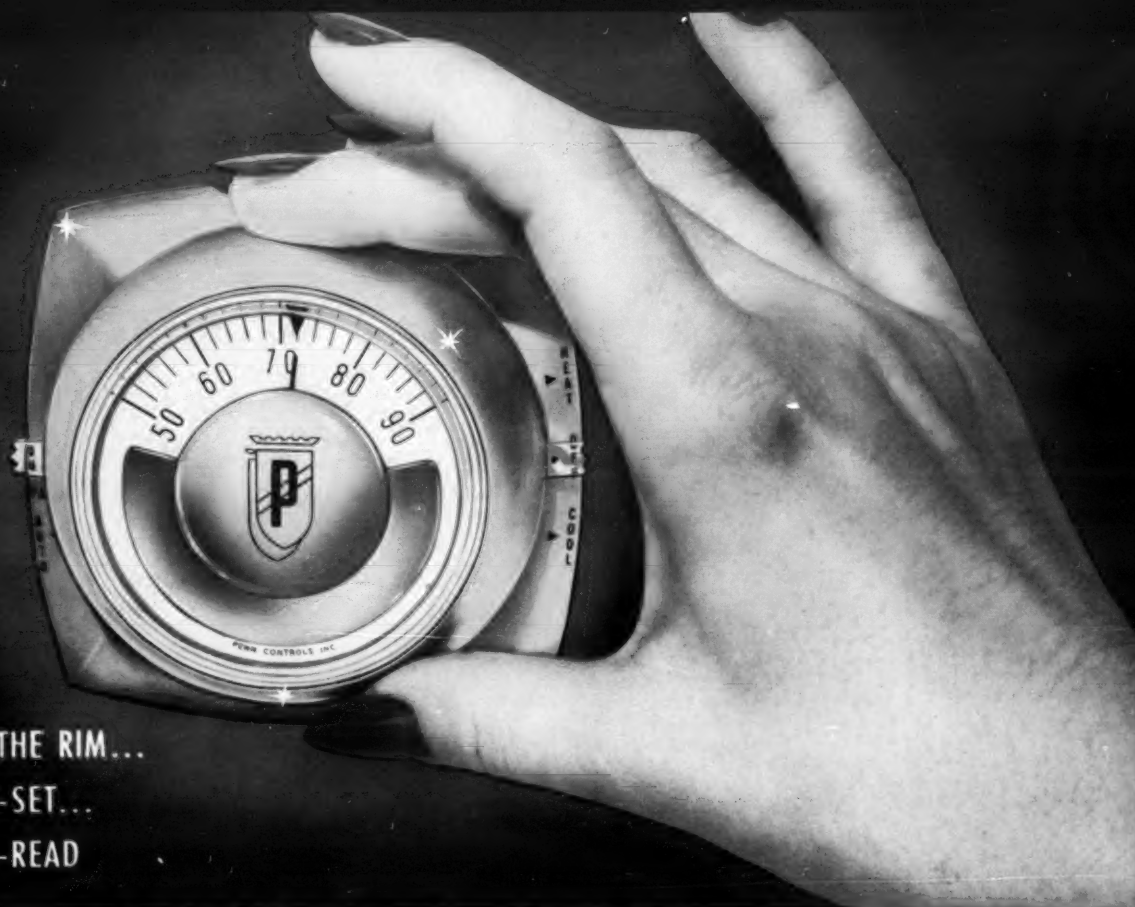
Packaged Air Cooled Air Conditioning Units—2 through 7½ tons. Residential and commercial applications.



Packaged air conditioning units—3 through 50 tons.



Condensing units up to 100 tons—F-12 or F-22.



JUST DIAL THE RIM...
EASIEST-TO-SET...
EASIEST-TO-READ

USE PENN'S NEW RIMSET THERMOSTAT TO HELP SELL HEATING-COOLING JOBS

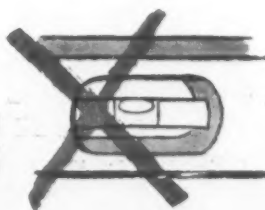
No squinting

Extra large stationary dial face with big numerals make RIMSET today's easiest-to-read thermostat.



No chattering

Unlike other thermostats, RIMSET does not chatter to cause "on-off" operation when vibration occurs.



No leveling

Installation is easier and accurate operation is assured because leveling is not necessary.

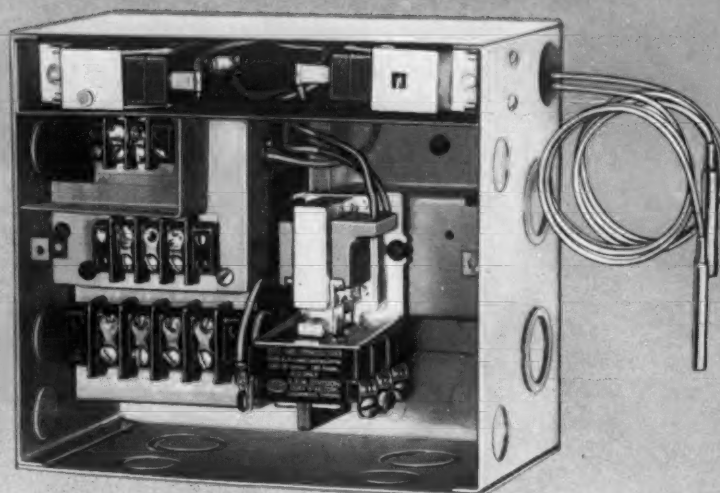
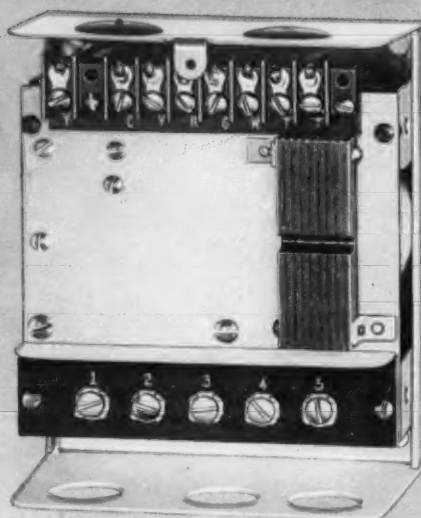
There's nothing else like it...it has accuracy, dependability, extra convenience and blendable beauty

You get extra sales power at no extra cost with Penn's RIMSET thermostat. It has features your customers want and can't get with any other thermostat. It is easier to set... you simply dial the rim... the scale remains stationary and is always "easiest-to-read". It has snap-acting contacts to eliminate "on-off" operation caused by vibration. And, it has modern styling and beauty to blend with any room decor.

With the Penn RIMSET thermostat unit, various interchangeable sub-bases are available for 12 different heating and cooling jobs! On your next installation, use Penn's RIMSET... the thermostat that helps close sales then keeps customers sold.

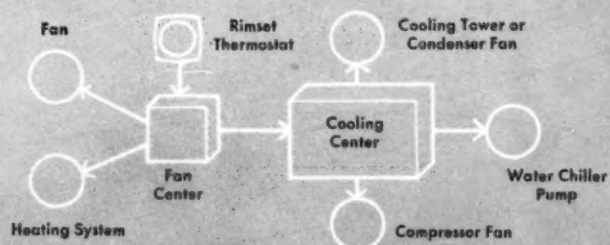
And to complete your control "package" here's the...



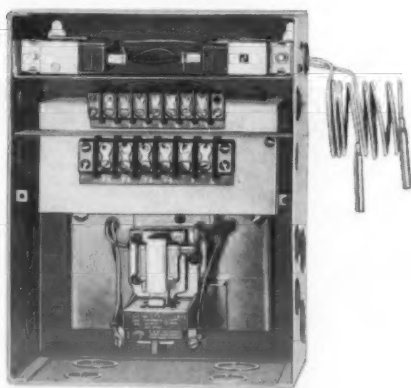


Fan Center and Cooling Center

The Fan Center is 6" high and 4 1/2" wide. It combines a transformer with a fan relay, reset relay and heating relay (one or all). The Cooling Center is 7" high and 8" wide. It combines pressure controls, contactor, auxiliary relay for (a) water chiller pump, (b) tower pump or fan relay or both, (c) condenser fan relay. Diagram illustrates functions.



NEWEST CONTROL CENTERS for Heating-Cooling from Penn!



System Center

Only 11" high and 8" wide, this compact unit combines all the control functions of the Fan Center and Cooling Center. The center panel in this unit is easily removed for ease in wiring.

Compact Penn residential Control Centers, with factory-wired internal circuits, are designed to save installation time

Here are the newest advancements in Control Center engineering design! Penn offers two basic types for all-sized residential units through 40 amps., single phase, 30 amps., three phase. For air conditioning systems with remote condensing units, a "Fan Center" controls the air handling equipment while a "Cooling Center" controls the remote condensing unit or water chiller. For self-contained systems, the "System Center" electrically interlocks in one unit all heating-cooling functions.

These Control Centers are designed to operate with the Penn RIMSET thermostat to give your customers the finest year 'round air conditioning performance. Get the complete story... write to Penn Controls, Inc., Goshen, Indiana.

PENN CONTROLS, INC. Goshen, Indiana

EXPORT DIVISION: 27 E. 38th ST., NEW YORK, N.Y.

AUTOMATIC CONTROLS FOR HEATING, REFRIGERATION, AIR CONDITIONING, APPLIANCES, PUMPS, AIR COMPRESSORS, ENGINES

Design-Engineer Tells What He Expects Of Catalogs, Manufacturers' Salesmen

HARTFORD, Conn. — During its national sales meeting, The Arrow-Hart & Hegeman Electric Co., manufacturer of motor controls and wiring devices, used an unusual method to better acquaint its branch managers and supervisors with the requirements of the company's prospects and customers.

Arrow-Hart invited customers to address the meeting and state specifically how the manufacturer could serve them most effectively.

One of the principal speakers cast in the role of "customer" was Joseph G. Adiletta, assistant manager, Electronics Laboratory, American Machine & Foundry Co., Stamford, Conn., whose topic was "The Design-Engineer's Influence on Sales of Commercial Products."

After reminding Arrow-Hart's branch managers and supervisors that "the success of a sale depends to a large extent on the accuracy with which the customer and his requirements are identified and satisfied," Adiletta went on to cite several methods by which this objective can be reached—through written material or in-person selling—when the potential customer is a design-engineer.

Distribute Catalogs to People Who Request Them

Acknowledging that most companies provide central catalog files to the engineering departments, and that the catalogs are usually maintained in good order, Adiletta maintained "that such a central file is no substitute for the personal copies in the possession of the designers and engineers."

He asserted that manufacturers should not hesitate to distribute catalogs and product data to the technical people who request them. He felt that hesitating to distribute duplicate information could often prove to be very expensive economy for the manufacturer.

Suggests Convenient Indexes, Tabs

In recommending specific features of catalogs and other technical publications that would prove especially helpful to design-engineers, Adiletta listed convenient indexes and index tabs, bound-in blank pages for notes, and a space on the cover to record the owner's name.

He stated that the company and product titles, product identification numbers, and all symbols, must be clearly presented and that the issue date of the material should be prominently displayed to avoid selection of

obsolete items by the user. He cited one common mistake as the failure to make a distinction between material intended for purchasing department use and that to be used by engineers.

"When the engineer picks up a catalog, he expects to find information about the specific product he needs: the physical dimension; the item's actual

weight; the mounting method and instructions; the availability of items in general—shelf item, warehouse stock, monthly run schedule, etc.—; approximate price; military use, including MIL. Specifications met and when qualified as certified by the government, and the street address and phone number of the local distributor . . . to facilitate contact by the engineer

if additional information is the basis for future sales." wanted."

Adiletta stressed that the importance of this information cannot be over-emphasized since, in many cases, the selection of a commercial item is a direct result of the availability of product information and the ease of contact between the engineer and the vendor.

Commenting on the manufacturer's salesman's function, he said, "Sell only factual information to the engineer . . . if you can explain how your product works and point out the important features to be considered, you will be providing

Adiletta advised salesmen, "Call at regular intervals to re-new contacts and always ask to meet new people. Don't hesitate to arrange contacts with your factory technical representatives to answer engineer's technical questions beyond your knowledge."

Where the product being sold requires disassembly for repair or maintenance, Adiletta suggested that legible instruction sheets and illustrations be provided. For complex designs, he recommended certified drawings showing the dimensions and/or performance characteristics.



PRE-ATTRITED. At Davison, PA 400® Silica Gel is Pre-Attrited to give superior non-dusting qualities. First it's beaten up; then it's polished. All sharp edges and dust disappear. What's left is hard and tough . . . won't break down in drier service. So ask for the drier filled with Pre-Attrited PA 400. Both you and your customers will be happy you did. See your distributor tomorrow.

MIGHTY MITE
Thermal Protectors

ARE **CHEAP**

Insurance Against
Motor Burn-outs

MECHANICAL INDUSTRIES
PRODUCTION CO.
223 ASH ST. • AKRON, OHIO

DAVISON
CHEMICAL COMPANY
Division of W. R. Grace & Co.
Baltimore 3, Maryland

Numbered and Packaged Prefab Ducts, Fittings Speed Installation In Projects, Cut Costs

CINCINNATI — With prefabricated duct, pipe, and fittings gaining in acceptance and use, the Williamson Co. here has made the next logical step of numbering and packaging all the ductwork material needed for a home heating or air conditioning system.

The new method offers simplified ordering, worry-free handling, faster and easier installation, lowered material and labor costs, prevention of loss or damage to parts, and assures an efficient, streamlined installation, Williamson claims.

Under this plan a set of the house plans is sent to the duct, pipe, and fittings distributor. He designs a duct layout for the particular house plan, including a complete air distribution system to heat and/or cool the house. Every part of the system is numbered for fast, easy identification.

Plan Applicable To Any Style House

The duct, pipe, and fittings are shipped ready to install, in separate containers for each house. The plan is applicable to any style house . . . basement, slab, crawl space, or even where attic installations might be required, but is restricted to projects of 10 or more houses.

In using this method, the dealer's first step is to supply a set of plans of the houses to the Williamson distributor, whose engineers determine the heat gain and/or loss and the requirements of the air distribution system, recognizing that good air distribution is just as essential as good equipment for satisfactory home heating and cooling.

'Take-Off' Plan Made

A "take-off" plan of the system is made, using the house plans as the base. This plan shows the exact location of every duct, pipe, and fitting required in the system. It shows, in addition, the exact direction in which the ducts and branches run, their exact length, and other details to speed installation and assure an efficient system.

From the "take-off" plan, a complete list of all parts required for the house is prepared, which is the distributor recommendation of what the dealer should order. Pricing of the complete air distribution system is quick and accurate. Prices are known in advance, permitting an exact material cost record. With the exact material costs known in advance, the dealer is a long way toward assuring himself a profit on this phase of the operation, Williamson believes.

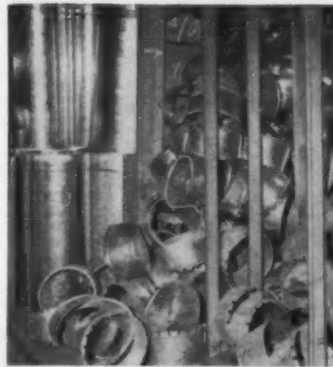
After the dealer has examined the recommendations and verified the order, the parts are taken from the distributor's factory stocks and are boxed in segments according to construction phases.

In the past, pipe, duct, and fittings were generally delivered loose, as a collection of different shaped and sized parts. At best, they were wired into ungainly

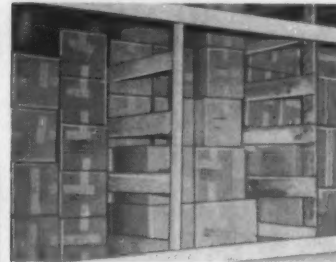
bundles which were difficult to handle. In these forms, pipe, duct, and fittings were hard to handle, difficult to store, required extra labor, and were easily lost or damaged.

Bulk shipments of air distribution pipe and fittings were usually assembled with a large number of similar parts assorted at one time. There was no regard in shipping, for the order in which they were used. The result was extra work on the job, or in the project warehouse, in sorting the parts needed for any particular job.

Under the new plan, the distributor packs together (or orders in cartons from the manufacturer) only those parts



LOOSE storage of pipe and fittings takes space and can easily lead to damage.



PACKAGED prefabricated ductwork is protected in shipment and storage, can speed installation, cut costs.

ther subdivided. Those to be used "before plastering" are packed separately from those to be used "after plastering." Shipment is made in cartons clearly identified for the particular project and specific type house in the project, and shows whether parts are for use before or after plastering.

Packaged duct, pipe, and fittings require much less space in truck or rail car than loose fit-

tings, so much less that Williamson calls it the "Com-Packed" system.

When packaged fittings arrive on the job, they are much easier to transfer into storage, Williamson says. In the storeroom or warehouse they require less space and make identification of parts for each home easier. The boxes all have the same base dimensions, helping to make storage easy. At the time of delivery to the individual house, time formerly lost in assorting parts is saved.

Delivery of the air distribution system parts for multi-house projects can be accomplished in one-fifth the time usually required. Instead of sorting and carrying hundreds of smaller, different shaped pieces, the trucker merely delivers a few cartons of packed parts.

If there is a reasonably good access road for a small truck,

STANDARDIZE ON HONEYWELL
FOR ALL YOUR
RESIDENTIAL AIR CONDITIONING
CONTROL NEEDS

Now, a new line of

Terminals, reset button and differential are together, needs access from only one side.

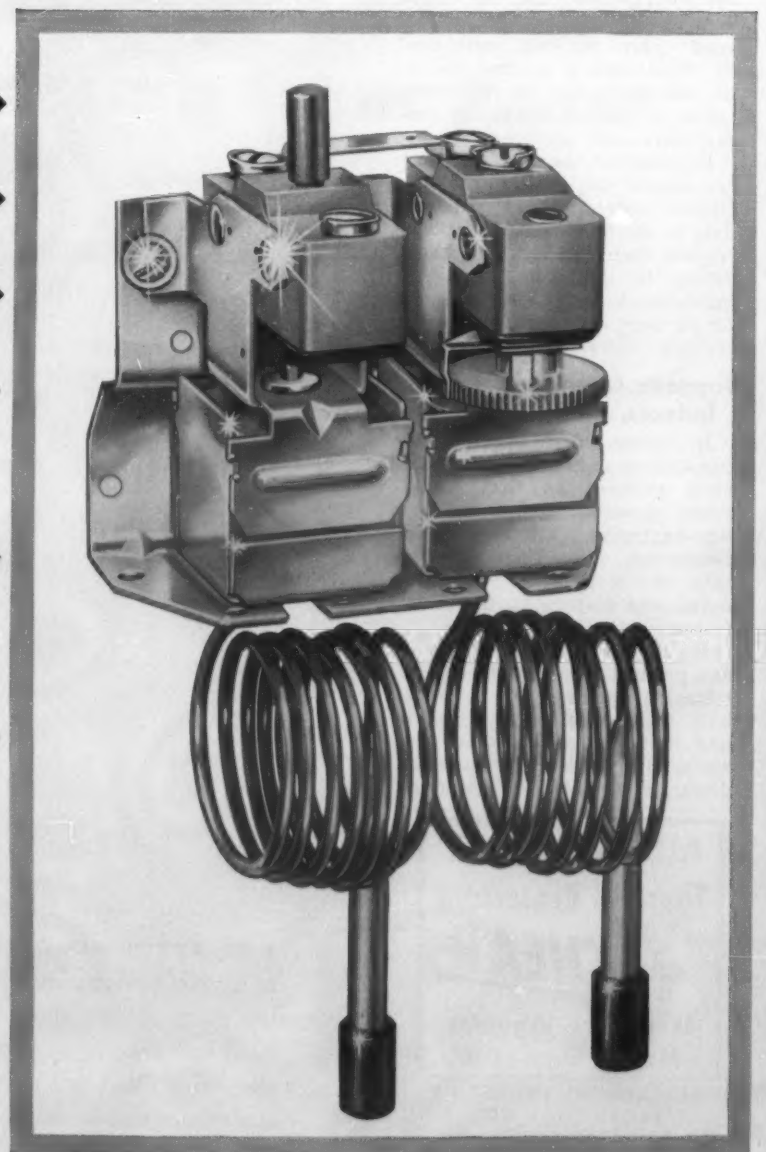
Trouble-free—famous, long-lasting MICRO SWITCH enclosed switch seals out dirt, lint and moisture.

No tweezer parts—a simple, direct-acting switch mechanism. No pivots, levers or springs.

Simple, differential adjustment—knurled differential adjustment knob can be operated by hand without use of tools.

Stainless-steel diaphragm—designed for precision action and lasting operation . . . unaffected by corrosive atmosphere.

One-piece capillary—eliminates the possibility of leaks or weak spots, normally a problem at soldered joints.

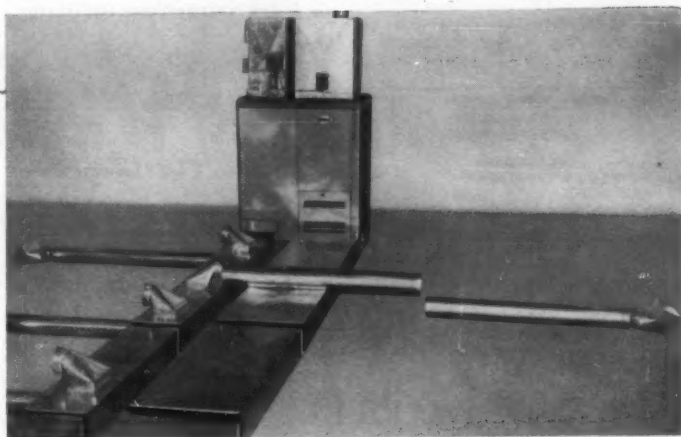


air distribution systems for as many as 25 houses can be delivered by one man in about two hours using the new method, according to Williamson.

The cartons also protect the duct, pipe, and fittings against damage through rough or careless handling, and assure that all parts are clean at installation time. Loss through misplacement or pilferage is substantially reduced. Loss through mistakes in assorting parts is eliminated.

Speed of installation and consequent savings on the job are a very important benefit of the method. After the cartons are delivered to the home, a non-skilled laborer can lay out the parts for the air distribution system on the basement floor. His guide to the layout is the "take-off" plan supplied by the distributor.

By referring to the plan and orienting himself in the house



UNSKILLED workman can arrange Williamson numbered prefabricated duct and fittings on floor in advance to save time of skilled sheet metal man.

basement, the non-skilled worker finds it easy to place the parts in their proper arrangement. Numbers embossed into the metal of each part are his final source of identification,

and enable him to perform work which at one time would have been deemed out of the question.

For installation, a skilled sheet metal worker is usually

required. His work, however, is devoted exclusively to the actual installation in the house. With the parts all laid out for him, and in their correct order, he can move speedily through the job.

WHAT... WHEN... WHERE

— A Guide to Coming Events of Interest

National Association of Retail Grocers Convention and Exhibition, June 8-12, Colliseum, New York City.

Edison Electric Institute Annual Convention June 9-12, Boston.

Oil-Heat Institute of America Convention, Exposition June 9-13, New York City.

American Society of Heating & Air-Conditioning Engineers and American Society of Refrigerating Engineers JOINT MEETING

June 23-25, Leamington hotel, Minneapolis.

National Plumbing-Heating-Cooling Exposition and National Association of Plumbing Contractors Convention June 30-July 3, Pan Pacific Auditorium, Los Angeles.

Men on the Move...

Rubatex Div., Great American Industries, Inc.—HARRY P. HANCOCK, JR. has been named personnel manager. He formerly was industrial relations management consultant for Booz-Allen & Hamilton International Ltd.

Research Products Corp.—JOHN P. DONNELLY has been named to cover Indiana and Kentucky (except Covington and Ashland, Ky.) from South Bend, Ind. headquarters.

Sta-Rite Products, Inc.—G. A. (PAT) PATTERSON, former chief engineer, has been named product-market development director, a new post.

Acme Electric Corp. (Cuba, N. Y.)—L. P. (LANNY) WIEGAND has been named direct factory representative in southern California. He was with Electric Products Corp. of Los Angeles for 19 years.

Recold Corp.—DAVID S. BRAINARD has been upped to development laboratory manager from his post as an engineer in the laboratory.

Kelvinator Div., American Motors Corp.—Appointment of LAWRENCE L. WARD as Detroit zone manager has been announced. Ward has been zone sales manager.

Flexonics Corp.—COL. ROBERT M. BURNETT, retired Army officer and formerly executive officer in the office of the assistant secretary of Army, has joined the firm as planning coordinator and assistant to the president.

Robertshaw-Fulton Controls Co.—CHARLES E. SMITH, former assistant national service director, has been named national service director of the firm. D. REX SCOTT, who has served in the Cleveland office sales department, has been appointed manager of planning. JOSEPH A. McCABE, who was with General Electric Co. in consumer products, has joined the Bridgeport Thermostat Div. as sales engineer.

Jet Spray International—DONALD A. DAVIS, formerly with Kenyon & Eckhardt advertising agency, has been named director of international sales with headquarters in Mexico City.

Hotpoint Co.—F. W. McDONALD, formerly district manager in Milwaukee, has been named Chicago-district manager and the Milwaukee territory will be consolidated with Chicago. E. W. PUTZ has been appointed sales manager of the Milwaukee-Appleton, Wis. areas. He has held several sales positions with Gesco. A. P. SMITH, formerly operating manager-Milwaukee, has been named operating manager-Chicago. R. F. EBERLE has been upped to operating manager-Milwaukee. MALCOLM R. HEBERT has been named manager, product publicity department. He has held various publicity and public relations posts since 1953.

pressure controls

HONEYWELL PRESSURETROL*— COMPACT, DEPENDABLE— 11 MODELS TO CHOOSE FROM

This new Honeywell P432 high-low Pressuretrol is compact and functionally designed to meet the needs of today's neat, well integrated control panels.

You can choose the P432—or any of Honeywell's 11 Pressuretrol models to meet the demands of every type of residential air conditioning equipment and a wide range of other refrigeration applications. These Pressuretrols are available as separate high, separate low or combination high-low devices. Both high and low pressure controls can be ordered with manual reset. Low pressure controls can be

*Trademark

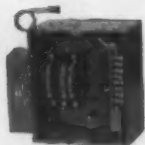
specified with adjustable or fixed differential.

Honeywell Pressuretrols can be ordered as part of a panel or purchased separately.

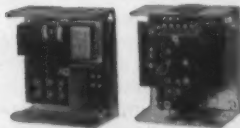
Now you can standardize on pressure controls designed specifically for packaged air conditioning units, made, matched and backed by Honeywell.

Get complete information on Honeywell's line of Pressuretrols and other air conditioning controls. Call your local Honeywell office or write Minneapolis-Honeywell, Dept. AN-6-51, Minneapolis 8, Minnesota.

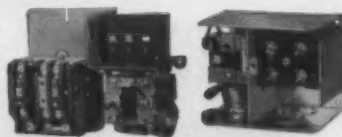
These control panels—for use with Honeywell Pressuretrols—
offer you maximum flexibility



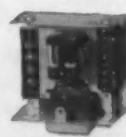
For self-contained units—WB212 panel with pressure control. For larger packaged units.



For attic type units—W429 panel for self-contained, add-on, one-stage cooling units. W430 panel for two-stage, self-contained cooling units (time delay available).



For remote condensing units—(These Honeywell Panels contain motor starter and pressure control). W431 panel for units up to 7½ tons. W435 panel for remote 2-ton and some 3-ton condensing units.



Evaporator Sequencing Panel—W226, designed for use with W431 or W435.

Honeywell



First in Controls

They'll
Do It
Every
Time
by
Jimmy
Hatlo



Home Equipment Retailing Troubles Analyzed

WHAT'S THE MATTER with the home equipment business? Economists, with their graphs and statistics, are proving what almost every dealer knows: people aren't buying consumer durables at the rate they could or should.

To be sure, Americans have the highest savings deposits on record as of now. However, they are investing a smaller proportion of their "discretionary income" on durable goods—particularly such home equipment as refrigerators, air conditioners, and freezers.

Why? Here are a few informed appraisals:

Many dealers charge that there isn't sufficient variety between a 1955 refrigerator and a 1958 "new model" to make a lady desire the fifty-eight intensely enough to buy it—instead of something else she wants.

Cut-price selling, which characterizes declining home equipment sales volume, has back-fired, too.

Instead of luring more customers into the market, it has made them confused and wary. (Other people, they worry, are getting bigger discounts).

Decline in home building starts also has reduced the number of new-home prospects for complete kitchens, bathrooms, and residential air conditioning.

As a natural result of time and biology, the home equipment market is volatile. During the years right after World War II, for example, new families were forming at an amazing rate, and producing bumper crops of babies. These suddenly conceived families needed and could budget for homes and labor-saving devices.

Today, their war-years children are in their teens. They now require more food

and more clothes and more "walking around money" (which means: less money for home improvements).

Additionally, thanks to increased leisure and longer paid-vacations, consumers have become excited about "leisure" products: outboard motors, boats, hi-fi sets, vacation travel, sporting and cultural recreational activities of myriad sorts.

U. S. Commerce Dept. figures show a drop from 35,000 major home equipment dealers in 1948 to 27,000 in 1954. Probably there are less than 21,000 existing in 1958.

Still there are too many.

A scramble on the part of manufacturers to keep or proselyte the remaining GOOD dealers by offering enticements and concessions—thus adding to price confusion—has resulted.

Finally, consumer attitudes toward our economy have changed. A decade ago Mr. Consumer was full of optimism for the future, and riding the crest of an ever expanding and expending wage-increase wave.

Today Mr. Buyer is playing his cards closer to the vest. He isn't so blithe about instalment buying as he was, and he's a bit uneasy about The Future.

He is biting his nails, furthermore, about the jittery international situation. Constantly increasing taxes and prices stun him, and the gloomy outlook as to a War of Annihilation leaves him almost paralyzed.

Another important reason for consumer reluctance to shell out hundreds of dollars for a piece of home equipment:

Uninspired promotional and advertising techniques.

Lastly, and probably most important, SERVICE is at an all-time low.

Mr. Dealer and Contractor: "He Profits Most Who Services Best."

Handy Way to Subscribe

To See the Industry In Action EVERY WEEK

Keep up-to-date on what's going on in your industry. You'll see action weekly in AIR CONDITIONING & REFRIGERATION NEWS. Covers latest news and gives you top how-to-do-it reports on residential, commercial, and industrial air conditioning, heating, and refrigeration for contractors, dealers, consulting engineers, distributors, servicemen, and manufacturers. Read the industry's only newspaper every week—you'll profit by it—only \$6.00 per year, 52 issues (U.S. and Canada). Foreign: \$10.00 per year.

AIR CONDITIONING & REFRIGERATION NEWS
450 W. Fort Street—Detroit 26, Mich.
Gentlemen:
Send The NEWS every week for one year.
☐ \$6.00 enclosed ☐ Bill Me ☐ Bill Company

Name
Company
Street
City Zone..... State.....
IMPORTANT: Company's Type of Business.....

6-9-58

Trade Mark
reg. U.S. Pat.
Office:
Est. 1926

AIR CONDITIONING & REFRIGERATION NEWS

F. M. COCKRELL, Founder

'The Conscience of the Industry'

Published Every Monday by BUSINESS NEWS PUBLISHING CO., 450 W. Fort St., Detroit 26, Mich. Telephone Woodward 2-0924. Subscription Rates: U. S. and Possessions and Canada: \$6.00 per year; 2 years, \$9.00; 3 years, \$12.00. All other countries: \$10 per year. Single copy price, 40 cents. Ten or more copies, 30 cents; 50 or more copies, 20 cents each. Send remittance with order.

EDITOR & PUBLISHER,
George F. Taubeneck

EDITORIAL DIRECTOR,
Phil B. Redeker

ASSOCIATE EDITOR,
C. Dale Mericle

ASSISTANT EDITORS:
John Sweet
Hugh Mahar
George Hanning

TECHNICAL EDITOR, Frank Versagi

STATISTICAL EDITOR, John MacLean

GEN. MGR., Warren Jones

GEN. PROD. MGR., Walter Schuler

ADV. PROD. MGR., A. M. Barrow

SUBSCRIPTION MGR., Rosalie Ashley

READER'S SERVICE MGR.,
Vincine Mogyordoli

PRESIDENT, Edward L. Henderson

ADV. MGR., Robert M. Price

WESTERN ADV. MGR.,
Allen Schildhammer

ASST. ADV. MGR., Joe Sullivan

ADVERTISING REPRESENTATIVES:
Rex Smith
Frank Taylor

ADVERTISING OFFICES:
New York, 521 Fifth Ave.
Murray Hill 2-1928-9
Robert M. Price
Frank Taylor
Chicago, 134 S. LaSalle St.
Franklin 2-8093
Allen Schildhammer
Rex Smith
Detroit, 450 W. Fort St.
Woodward 2-0924
Joe Sullivan
Los Angeles, 4710 Crenshaw Blvd.
AXminster 2-9501
Justin Hannon

Member, Audit Bureau of Circulations, Member, Associated Business Publications.

VOLUME 84, No. 6, SERIAL No. 1,524, JUNE 9, 1958



MIXED DISTRIBUTION, BUYING METHODS SCORED

A. Y. McDonald Mfg. Co.
Dubuque, Iowa

Editor:

Today management is faced with the demand to take immediate action on a very old problem. This problem has been with us since selling first became a profession. As yet there has been no clearcut decisive answer for the problem.

The problem is the mixed method of distribution and buying.

Now is the time that management must make a stand as to methods of distribution and purchasing, so as to reduce selling costs through selected channels.

Management of manufacturers must make a stand and declare themselves as to what method of distribution they are going to use in the tremendous growth years ahead.

If they are going to sell direct, then they must declare that position. If they decide to sell through dealers or wholesalers, then that position must be declared, however, they cannot expect to have a deviation from their normal channel of distribution of over 3% and have their sales program effective.

Unfortunately, many manufacturers today are not willing to take the stand and publicly declare that they will distribute via a certain channel.

On the other hand, many wholesalers and dealers are not loyal to those manufacturers who have openly and unequivocally declared their sales policy to be strictly through the wholesaler or dealer type operations.

Specifically, there are probably only one or two manufacturers in any one industry who have declared their policy in writing. Those who have declared their policy in writing wonder if they have done the right thing.

If their policy is that they

sell only through recognized wholesalers, they have the right to expect the wholesaler to be loyal to them. On the other hand, if they have declared their policy to be that of distributing through dealers, then certainly they have the right to expect the dealer to be loyal.

It is only fair that distribution channels, such as wholesalers and dealers, have loyalty to their suppliers if their supplier is operating in the manner most beneficial to the distributor or dealer.

As competition increases and the country's over-production problem becomes more important and its significance magnified, management must be required to take a firm and definite stand whether it be at the manufacturing level, wholesaling level, or dealer level.

A manufacturer who will not take a positive stand and commit himself as to how he will distribute his product does not have confidence in his customer's operation method.

If a manufacturer will not come out in the open with his declared policy, it is up to the dealer or wholesaler to demand these policies to be stated in writing.

If a wholesaler or dealer will not commit himself as to his purchasing policy it is certainly only right that the manufacturer be given the opportunity to request a policy statement from such reseller in writing.

Management must make decisions now. Dual distribution and purchasing programs have not worked in the past and cannot work in the future. It is the responsibility of every member of management to clearly outline what the policy is going to be.

The challenge is up to management and management alone—management of manufacturing, wholesaling, and retailing.

R. E. SAGE,
General Sales Manager

'Data Center' Allows 1 Man To Control Climate In All Public Rooms of Queen Elizabeth Hotel

MONTREAL, Que., Can.—An electronic "brain" described by engineers as "the most advanced one ever built to control human comfort" was unveiled in Montreal recently with the opening of a new, 21-story Queen Elizabeth hotel. Its job: to supervise the operation of the hotel's giant air conditioning system—said to be the largest in Canada.

The "brain," designed and produced by Minneapolis-Honeywell, is a walk-in control center located in a glass-fronted room on the hotel's concourse level. By means of it one man can, with fingertip ease, provide the new hotel with what M-H officials term "perfect indoor climate."

Four Main Functions Of Data Center

Essentially, the control center—known as a "Supervisory DataCenter"—consists of a colorgraphic panel and a data-handling system which makes it possible for the system to provide four main functions—continual checking and logging of key temperatures and other data; adjustment of controls; starting and stopping of heating and cooling equipment; investigation and handling of complaints.

The colorgraphic panel is approximately 20 ft. long and 4 ft. high and is divided into separate modules, or sections, with each module providing graphic representation in a functional way of each of the air handling systems. Each module incorporates a complete schematic layout of the fan systems showing dampers, heating and cooling coils, fan motors.

The heating module, for example, has heating coil and steam flow lines in red; cooling coil and chilled water flow lines in blue, return water lines in green; lettering in dark brown, and the background in light tan.

Exhaust fan controls are grouped on another module complete with nameplates, push-buttons, and pilot lights. On the panel, too, are start-stop buttons and pilot lights for the 82 fans located throughout the building and 34 remote control point adjusters.

Remote Temperature Adjustments Included

Also included are remote temperature adjustments; remote fan stop-start pushbutton stations; and pilot lights indicating the operation of cooling tower fans, condenser water, and chilled water pumps.

The data handling system records temperature automatically, or on demand on an electric typewriter.

The system incorporates an audio and visual alarm which functions as temperatures go above or below predetermined limits. More than 45,000 ft. of thermocouple wire alone were needed to tie in the data handling equipment and thermocouple locations used in the temperature scanning system.

To understand the role the Supervisory DataCenter plays in the Queen Elizabeth hotel,

the hotel itself should be considered as two separate structures with one consisting of the 1,200 guest rooms and the second structure consisting of public rooms, banquet halls, exhibit rooms, salons, dining rooms, cocktail lounges, stores, kitchens, and laundry rooms. The concept of SDC does not include the checking and adjustment of the room thermostats.

As far as the guest room structure is concerned, each bedroom is equipped with an air conditioning unit located under the window. This unit receives high velocity conditioned air from a central fan system. It mixes this air with room air, passing the mixture over a

heating-cooling coil which is fed with either hot or chilled water depending upon the season.

On each one of the unit coils there is a pneumatic valve controlled by a "Honeywell Round" thermostat mounted on the wall in each guest's room. This combination of valve and thermostat lets the guest maintain his own comfort level of temperature regardless of what the temperature is next door.

As far as the public spaces are concerned, each banquet room, cocktail lounge, etc., has its own air conditioning system. The electronic thermostats used in those spaces—there are 35—sequence dampers and valves to maintain the desired comfort

level in these spaces as well as introduce the right amount of fresh air for ventilation purposes. Additional sensing elements, called thermocouples, feed information back to the control room.

A single engineer at the Supervisory DataCenter has the graphic representation of the entire air conditioning system in front of him.

Any key temperature can be checked by the touch of a button and a glance.

He can start and stop the 82 fans throughout the building and can begin compensating for heavy cooling loads in the meeting rooms even before delegates begin filling the seats. He can also pinpoint causes of mechanical and electrical troubles.

He is helped by the scanner which checks all the key temperatures every 15 minutes to make certain he is controlling temperature exactly.

The electronic data handling system is set up on an hourly basis, but can be arranged to log for five or ten minutes or at virtually any frequency desired. The digital clock signals when a sequence is due, sending a pulse to the programmer which signals the typewriter to print the time of the log.

The programmer starts the input selector switches which connect the thermocouples into the measuring circuit one by one. The voltage signal from these sensing elements is passed through a "translator" which converts the signal to a numerical impulse to be typewritten.

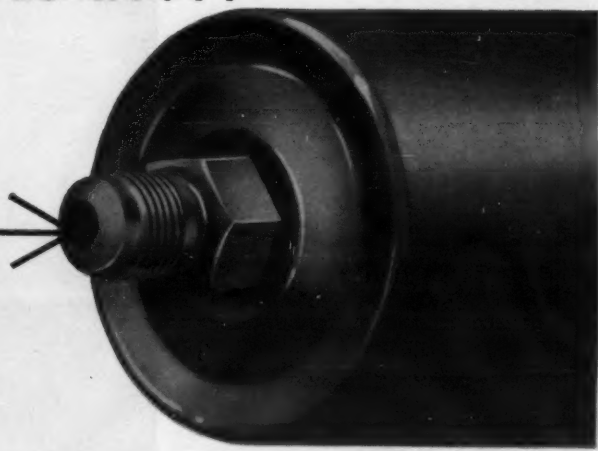
During the logging cycle any temperatures that are above or below the desired control points are printed in red on the log sheets. The engineer is also alerted to the needs for adjustment by the sounding of a horn and the automatic turning on of a light on the console.

WITH A MUELLER BRASS CO. *Drymaster* EVERYTHING GOES IN ...

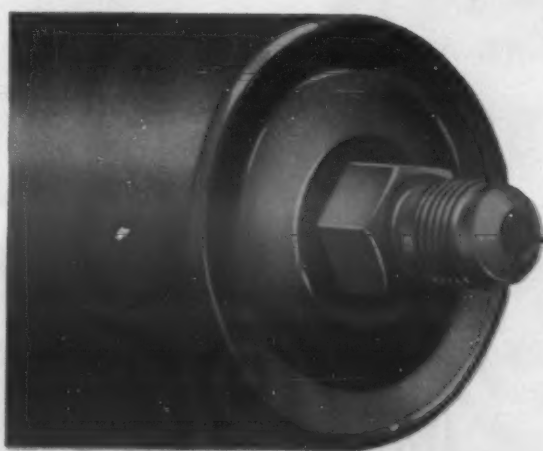


MOISTURE
SLUDGE
ACID, DIRT

MICRON-SIZE
PARTICLES
AND
REFRIGERANT



BUT ONLY PERFECT REFRIGERANT COMES OUT!



CLEAN
DRY
REFRIGERANT



THE NEW *Drymaster*

is the most perfectly balanced filter-drier you can buy because it gives both superb filtering and superb drying without sacrificing one for the other. Three design features provide the key to DRYMASTER'S outstanding performance ... "Hi-Fi" filter block desiccant ... super-fine monel screen filter tube ... and inlet distributor disc. There are 34 different sizes in both male flare and solder end connections in a wide range of capacities to fit any job requirement. Available now at better wholesalers everywhere.



WRITE TODAY FOR YOUR FREE SLIDE-GUIDE... Select the correct DRYMASTER for every installation quickly and easily.



MUELLER BRASS CO. PORT HURON 13, MICHIGAN



Duct and Fitting Resistance (1)

Good Duct Design Can Minimize 'Trouble' Installations Which Eat Up Profits, Damage Dealer's Reputation

By Dr. Stanley F. Gilman, Associate Director of Research, Research & Development Div., Carrier Corp.

The major advantage of a good duct design in heating or air conditioning is elimination of trouble jobs which cost the dealer money to revamp as well as damage his reputation in the locality.

Let's look at the consequences of a poor job of evaluating pressure loss of a duct system; i.e., of incorrectly sizing ducts. To do this, consider the characteristics of a fan in an air conditioning unit.

When operating at a constant speed, the pressure the fan develops will decrease as the c.f.m. of air handled by the fan increases.

Conversely, as pressure developed by the fan increases, c.f.m. delivery will decrease. Power required by the fan is proportional to the product of the c.f.m. and the pressure developed.

Duct design will influence the value of pressure required of the fan. If the duct system is designed so pressure loss is too high, then the c.f.m. of air circulated will be lower than desirable.

In a heating system this can cause supply air temperature at the bonnet to be excessively high. This may result in stratification of room air or, in extreme cases, the unit cutting off on high limit control.

Fan Speed-Up Suggested

For an installed system, a possible solution would be to speed up the fan to deliver more air so the system will perform satisfactorily.

However, power required by the fan increases as the cube of the speed. For example, if we double the speed of the fan, fan power will go up by a factor of eight.

Hence, the speed can be increased only a relatively small amount before the motor will be overloaded and cut off on its overload protection switch. Thus, the trouble job will still be a trouble job.

Larger Motor Might Be an Alternative

An alternative would be to replace the motor with a larger one, an expense the dealer would have to bear. In any case, the owner is penalized because higher power requirement of the fan will result in a higher operating cost than for a well designed system.

On the other hand, consider such a conservative duct design that the pressure requirement of the fan is very low. Now, at the set fan speed the c.f.m. of air circulated will be too high.

Bonnet temperature of the heating unit will be low and the high rate of air motion may cause drafts in the rooms.

Ducts will be larger than they need be and heat loss from ducts increases with duct size. Not only is duct heat loss apt to be excessive, but material has been wasted. Moreover, excessive dampening to balance the sys-

tem wastes power and increases operating cost.

When we consider the effect of poor duct design on a cooling system, there are even more serious consequences. Cooling equipment is particularly susceptible to variations in c.f.m. above or below its design point.

Too low a c.f.m. lowers evaporator temperature, increasing operating costs. Carried to an extreme, the coil will freeze up and the machine will cut off on low pressure cut-out.

In the opposite direction, too

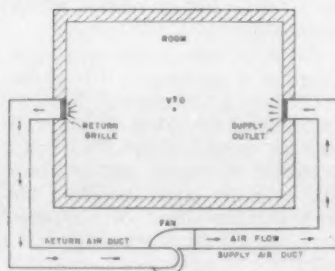


FIG. 1.

high a c.f.m. results in lack of dehumidification (moisture removal) so that room conditions are cool but "clammy."

In addition to this, poor duct

What are the fundamentals of air duct and fitting resistance? Why is it important that the air conditioning and heating installer know them?

Knowing them he can do two important things: 1. Design better air conditioning systems. 2. Minimize the number of "trouble" jobs that eat up profits and produce unsatisfied customers.

In these articles, Dr. Gilman explains clearly what pressure loss actually is, explains the two kinds of resistance in duct systems (a. friction pressure loss and b. dynamic loss), describes system pressure variations and why they occur, and explains the equivalent length concept.

The information given here was presented at the 27th annual conference on forced warm air at Michigan State university earlier this spring.

design can cause air to have an easy path to some rooms and a difficult path to others, throwing the system seriously out of balance.

Efforts to balance the system by throttling runs may increase

the pressure required at the fan to such an extent that c.f.m. falls below the proper value, and we still have a trouble job.

All in all, design of the duct system has an important bearing on the performance of the



**Big lineup of new models!
Competitive prices!
American Blower
Branch-Office Assistance!**

entire system and the conditions of comfort maintained.

What Is Pressure Loss?

A simplified duct system is shown in Fig. 1. Here is sketched a room with a return grille connected by a duct to a fan outside the room. Another duct runs from the fan outlet back to the room and terminates with a register. With the fan running, the velocity of the air in the main part of the room will be low. For all practical purposes it is zero. Let's consider what happens to 1 cu. ft. of this air at practically zero velocity. It is eventually pulled into the return grille and duct, speeded up, and then pushed through the supply duct and back into the room where again it slows down to near zero velocity. The cubic foot of air is now back in its original condition, or state.

However, we find the fan

motor consumes a certain amount of power and hence costs money to operate. Electricity has been used to rotate the fan blades and move the air through the duct system.

The capacity for doing work is called mechanical energy. Hence, the fan has supplied mechanical energy to move the air.

However, since our cubic foot of air started from near rest and return to near rest, apparently mechanical energy provided by the fan has disappeared.

Where has it gone? The mechanical energy has been dissipated in moving the air through ducts, raising its temperature.

This dissipation of mechanical energy causes the total pressure in a duct system to decrease in the direction in which the air flows. Hence pressure is "lost" and we speak of ducts, registers, etc., having *pressure losses*.

Since it takes energy to push

or pull air through ducts and fittings, they can be considered as "resisting" the flow of air through them. Hence, we speak of duct systems having "resistance."

A system that requires a relatively large amount of energy is said to have "high resistance." When we speak of determining either the resistance of a duct system or its pressure loss, we mean the same thing.

Some of the pressure loss in a duct system is caused by the rubbing action of air along the sides of the duct. This is termed *friction loss* or sometimes *friction pressure loss*.

Friction has advantages and disadvantages. Without friction, we could not control the amount of air delivered to a space. When the unit came on, it would deliver a tremendous quantity of air instantaneously and "flood" the house with air.

Cal. Poly, Utility Appliance Plan Home Designed Especially for Air Conditioning

LOS ANGELES — A home designed especially for air conditioning will be built in the Los Angeles area as a joint study project of a state college and a western manufacturer of home comfort appliances.

The project was announced jointly here by Harold P. Hayes, dean of engineering, California State Polytechnic college at San Luis Obispo, and Ben B. Breslow, president of Utility Appliance Corp. Cal. Poly is said to be the only school in the U. S. which awards engineering degrees in air conditioning.

Dean Hayes said that design of the home for "maximum human comfort and lowest

possible initial and operating cost" was assigned to students of three different disciplines at the San Luis Obispo campus as a practical problem.

Coordination is by George Hasslein, head of the Dept. of Architectural Engineering, with Air Conditioning and Ornamental Horticulture departments cooperating.

Utility, which manufactures "Gaffers & Sattler" appliances, underwrote design costs and will finance construction as a Gaffers & Sattler study house in San Fernando Valley.

Leo Hungerford, national director of sales engineering for Gaffers & Sattler, and past president of the American Society of Heating & Air-Conditioning Engineers, Southern California Chapter, is acting as technical advisor.

Thirty-two competitive designs for the house have been created by senior students. Of these, five are being selected by the school faculty with the winning plan to be chosen by a jury of prominent Los Angeles area architects and builders.

Construction is scheduled to begin after Jan. 1, 1959, with completion set for the following summer. The study home will be on public exhibition.

"Designing the indoor climate is bringing into being a new and total concept approach to home design in which the architect and builder will play increasingly important design roles," said Dean Hayes.

Coordination of all available thermal knowledge for such total design was recommended by leaders of U. S. industry and education at a UCLA conference in Los Angeles last fall.

Twelve architectural limitations and general specifications imposed on the student architects were:

"(1) Maximum square foot living area using minimum size heating and air conditioning equipment possible.

"(2) Outside design temperature of 100° d.b. and 72° w.b.

"(3) Inside design temperature of 80° d.b. and 50% relative humidity at outside design conditions.

"(4) Suggested square foot area between 1,500 sq. ft. and 1,800 sq. ft.

"(5) Three or four bedrooms, living room, family room, dining area, kitchen, and two baths.

"(6) House must sell from \$19,500 to \$21,500 if built in tract quantities, or on a custom basis, from \$22,500 to \$23,500, including land costs.

"(7) House shall be designed for a lot size of 60 by 125 ft.

"(8) Suggested full advantage of roof overhangs to shade exterior walls and glass.

"(9) Adequate roof insulation for maximum efficiency out of the air conditioning unit.

"(10) Study of various materials in the construction and use of those materials to help reduce heat gain.

"(11) Full advantage of landscaping and its effect in reducing heat gain.

"(12) House must be saleable, consistent with modern trends."

Hit a new high in sales and profits with American Blower Packaged Air Conditioners

Complete line

You can handle any commercial job — factory, office or store — with American Blower's complete line of packaged air conditioners — air- or water-cooled. They're competitively priced . . . easy to install.

Sold through regular channels of trade

Distribution of American Blower Packaged Air Conditioners follows normal channels: factory-distributor-dealer/contractor-user. Direct inquiries — by qualified prospects — are turned over to you!

Quality product backed by engineering and research

American Blower has been known as a leader in air conditioning and ventilation for over 76 years. Our reputation for quality products, engineering skill, and basic research helps you build sales.

National and local advertising and sales promotion

Your prospects are pre-sold by hard-hitting national advertising, backstopped locally by dealer advertising and sales promotion. Result: your customers know American Blower . . . want American Blower.

Training school

You and your installers can attend 5-day courses in the application and servicing of packaged air conditioners. Both are conducted by factory engineers at our Dearborn, Michigan, plant.

How American Blower is building for the future

New units — including a full line of air-cooled models — are available now to satisfy the growing demands of this profitable market. Each one is engineered to American Blower's high quality standards.

GET THE FACTS NOW: Write American-Standard,* American Blower Division, Detroit 32, Michigan.

* American-Standard and Standard are trademarks of American Radiator & Standard Sanitary Corporation.



AMERICAN-Standard

AMERICAN BLOWER DIVISION

FOR MORE INFORMATION ON THE PRODUCTS DESCRIBED ON THIS PAGE

Write Directly to the Company—at the Address Given in the News Item

Air Conditioning & Refrigeration News, June 9, 1958



High-Speed Saw Cuts Without Overheating

Continuous high-speed cutting without overheating in materials ranging from soft woods to stainless steel, is claimed for new "Supreme" model "Handy Angle" saw which is being offered by Price & Rutzebeck tool distributors, Dept. AC&RN, P.O. Box 30, Hayward, Calif.

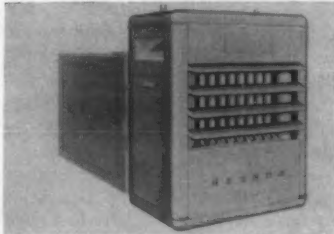
Supreme unit is a completely redesigned model.

A number of major changes are said to include new case design that improves lubrication, anti-friction bearings throughout, and heat-treated, hardened-and-polished material for all wearing parts.



Temperature-Operation Recorder Introduced

"Tempscribe Recorder" line has been expanded to include a combination temperature-operation recorder. This two-pen instrument incorporates all features of bulb-type, single-pen model and has a second pen for recording electrical operation according to Bacharach Industrial Instrument Co., Dept. AC&RN, 200 N. Braddock Ave., Pittsburgh 8.



Gas Unit Heater Has Enclosed Blower, Controls

Quiet operation and improved appearance are offered in the new line of enclosed blower-type gas unit heaters produced by the Reznor Mfg. Co., Dept. AC&RN, Mercer, Pa.

Blower and all controls are completely enclosed on this new model. All of the controls and connections are arranged in a convenient group and are easily accessible through a snap-out panel on the side of the heater.



Cafeteria Equipment Provides Flexibility

A complete new line of stainless steel "Custom-Modular" cafeteria equipment has been introduced by Bastian-Blessing Co., Dept. ACRN, 4203 W. Peterson Ave., Chicago 46.

Modular base construction combined with continuous custom tops, provides standardization with flexibility, the company claims. This makes it possible to design a cafeteria layout to meet individual requirements, using standard construction.



Furnaces Convert from Suspended to Hi-Boy Type

Suspended warm air furnaces with bonnet ratings of 84,000 and 112,000 B.t.u.h. have been added to its line of furnaces, according to John Wood Co., Heater & Tank Div., Dept. AC&RN, New York City.

New models are two-in-one units designed as suspended units or as hi-boy units, depending on the requirements of the particular installation.

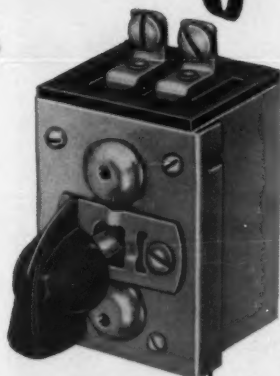
Conversion from a hi-boy to a suspended unit or vice versa is done by rotating the blower motor, to place the oil cups in a vertical position and rotating the observation door 90° to the vertical position.

Turn the unit over end for end to reverse the air flow and provide flexibility in suspended installations. Eyebolts for hanging may be removed from one side and attached to similar attaching members on the opposite side.

Compact, low cost, high capacity

thermostats for cooling

applications

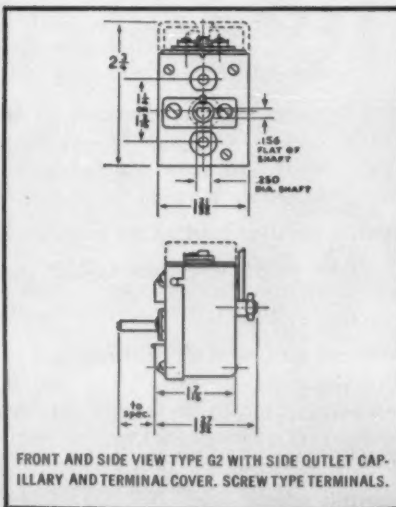


New Wilcolator Type G2 features improved, snap-action switch for higher contact ratings

With its improved, snap-action contact mechanism, the new Wilcolator G2 thermostat offers you much higher contact ratings than have hitherto been available in such a compact unit. Measuring only $2\frac{3}{4} \times 1\frac{5}{8} \times 1\frac{1}{8}$ in., it nevertheless has ample capacity for heavy duty appliances and medium industrial requirements.

Temperature differential is adjustable and can be factory set to your specifications. The G2 unit is available with Constant Cool position (motor load) where required. Contact mechanism not affected by vibration. No TV or radio interference. All steel parts heavily plated for corrosion resistance.

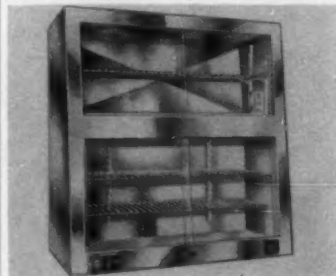
For complete information, write The Wilcolator Company, 1001 Newark Ave., Elizabeth, N.J. In Canada: Wilcolator (Canada) Ltd., 221 Evans Ave., Toronto 14, Ont. Export Address: Wilcolator, 1010 Schaff Bldg., 1505 Race St., Philadelphia 2, Pa.



FRONT AND SIDE VIEW TYPE G2 WITH SIDE OUTLET CAPILLARY AND TERMINAL COVER. SCREW TYPE TERMINALS.

SPECIFICATIONS

- Standard temperature range: 55°F-95°F
- Special temperature ranges: To customer's requirements
- Switch mechanism: Single pole, double break, snap action
- Motor ratings: 120 to 240 v a-c; running current—14 amp; locked rotor—60 amp
- Mounting: Back of panel or in enclosure
- Standard shaft: $\frac{1}{8}$ in. diam. flatted to .156 in.; length to customer's specifications
- Terminals: Screw type, AMP or Arkles



Lern Combines Heated, Refrigerated Display

A new idea in food merchandising cases is featured by Lern, Inc., Dept. AC&RN, 1455 W. Hubbard, Chicago 22.

Claimed to be a completely original concept, uniting a heated and refrigerated unit into a single, compact, space-saver counter display case, lower half of the new unit is a completely self-contained refrigerated display case for cream pies, gelatine, juices, salads, etc. The top section is a self-contained and independent heated display case, ideal for fruit pies, biscuits, sweet rolls, sandwiches, and sandwich meats. Both sections work independently—one keeping foods refrigerated; in the other, foods stay warm and fresh.

Total counter space for the new double-duty case is 36 in.



Remco Filter-Driers Use Molecular Sieves

A new line of "Molecular Sieve" filter-driers for use in air conditioning and refrigeration systems has been introduced by Remco, Inc., Dept. AC&RN, Zellenople, Pa.

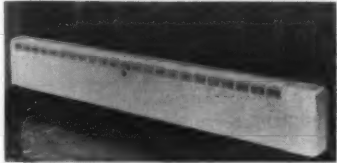
These new units combine the fast, thorough drying of Linde Molecular Sieves with claimed highly efficient "depth" filtering.

Molecular Sieve desiccant will adsorb and retain large quantities of moisture at liquid refrigerant temperatures of 140° F., while holding moisture concentrations at 10 parts per million.

THE Wilcolator COMPANY

MANUFACTURERS OF LIQUID EXPANSION ELECTRIC THERMOSTATS FOR:
ELECTRIC RANGES • ROOM COOLERS • AIR CONDITIONERS • CLOTHES DRYERS • SPACE HEATERS • ROLL WARMERS • ROASTERS • FRYERS • STEAM TABLES • WARMING OVENS • RANGETTE OVENS • WATER HEATERS • BAKE OVENS, ETC. • STOCK WATER HEATERS • RESTAURANT APPLIANCES • VENDING EQUIPMENT • PACKAGING MACHINERY • PHOTO DRYERS • BLUEPRINT MACHINERY • ETC.

ALL WILCOLATOR THERMOSTATS ARE UL AND CSA APPROVED AND LISTED



Simple Wall Radiation Installs Faster

A completely new line of wall radiation that incorporates modern styling with several engineering innovations has been introduced by the Fedders-Quigan Corp., Dept. AC&RN, 58-01 Grand Ave., Maspeth, N. Y.

Called the "Modernline" series, the new wall radiation is designed for use in commercial, industrial, educational, institutional, church, hospital and government buildings, and multi-unit housing.

Besides the heating elements, a Modernline unit consists of just three basic components: a back-plate assembly; universal pipe hangers; and the cover assembly. This simplicity results in reducing the installation time by 50%, it is claimed.



Ice Bags Conveyed In Baskets—No Belt

Automatic vendors for bags have been introduced by Refrigeration Engineering Co., Dept. AC&RN, Montgomery, Minn.

"Polar" automatic vendor for packaged ice is shipped ready to operate, is equipped with the Basket-Vend Conveyor with 48 7½-15-lb. bags of cubed or crushed ice in vending position. There is storage space within the station for 400 to 500 more bags of ice.

There are no belts on this new conveyor—each bag of ice travels in its own basket. Noise, tumbling, and dropping are claimed to be eliminated.

Another feature is the new space-saving corner-mounted coil with heat trap electric defrost system.



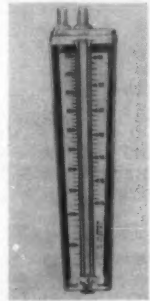
Two Screws Fasten Radiant Glass Heater

New 750-w. electric radiant glass heater has been developed by Berko Electric Mfg. Corp., Dept. AC&RN, 212-40 Jamaica Ave., Queens Village, N. Y.

Designed for wall surface mounting, new model HBT requires just two screw fastenings for permanent installation. Design also makes possible quick installation in small rooms and bathrooms where space is at a premium, the company said.

Meter Measures Air Velocity, Pressure

A new precision air velocity and static pressure indicator has been announced by the F. W. Dwyer Mfg. Co., Dept. AC&RN, P.O. Box 373, Michigan City, Ind.



No. 460 air meter gives direct readings for furnace draft, pressure drop across air filters, duct air velocity, supply grille velocity, and return grille velocity.

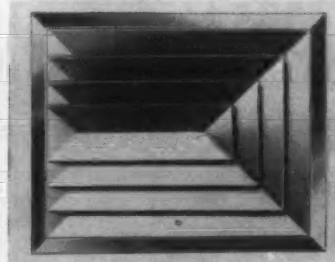
The instrument is based on the principle of the variable area flowmeter and features simple, rugged construction with only one moving part. Air velocity is registered in two ranges—260 to 1,200 f.p.m. on the low side and 1,000 to 4,000 f.p.m. on the high side.



11 Cu. Ft. Refrigerator In Compact Cabinet

A new 11-cu. ft. "Style Mark" refrigerator in a compact cabinet has been announced by Kelvinator Div., American Motors Corp., Dept. AC&RN, 14250 Plymouth Rd., Detroit 32.

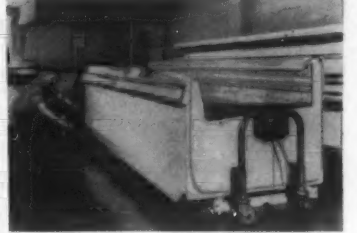
New Kelvinator model holds 70 lbs. of frozen food and includes a 2.5-cu. ft. drawer below the fresh food compartment for storing unrefrigerated and "pre-refrigerator" foods, such as canned fruits.



Diffusers Need No Baffles, Blank-Offs

A completely new line of square and rectangular air diffusers with built-in vane and louver arrangements that provide versatility and air diffusion efficiency without baffles and blank-offs has been announced by Titus Mfg. Corp., Dept. AC&RN, Waterloo, Iowa.

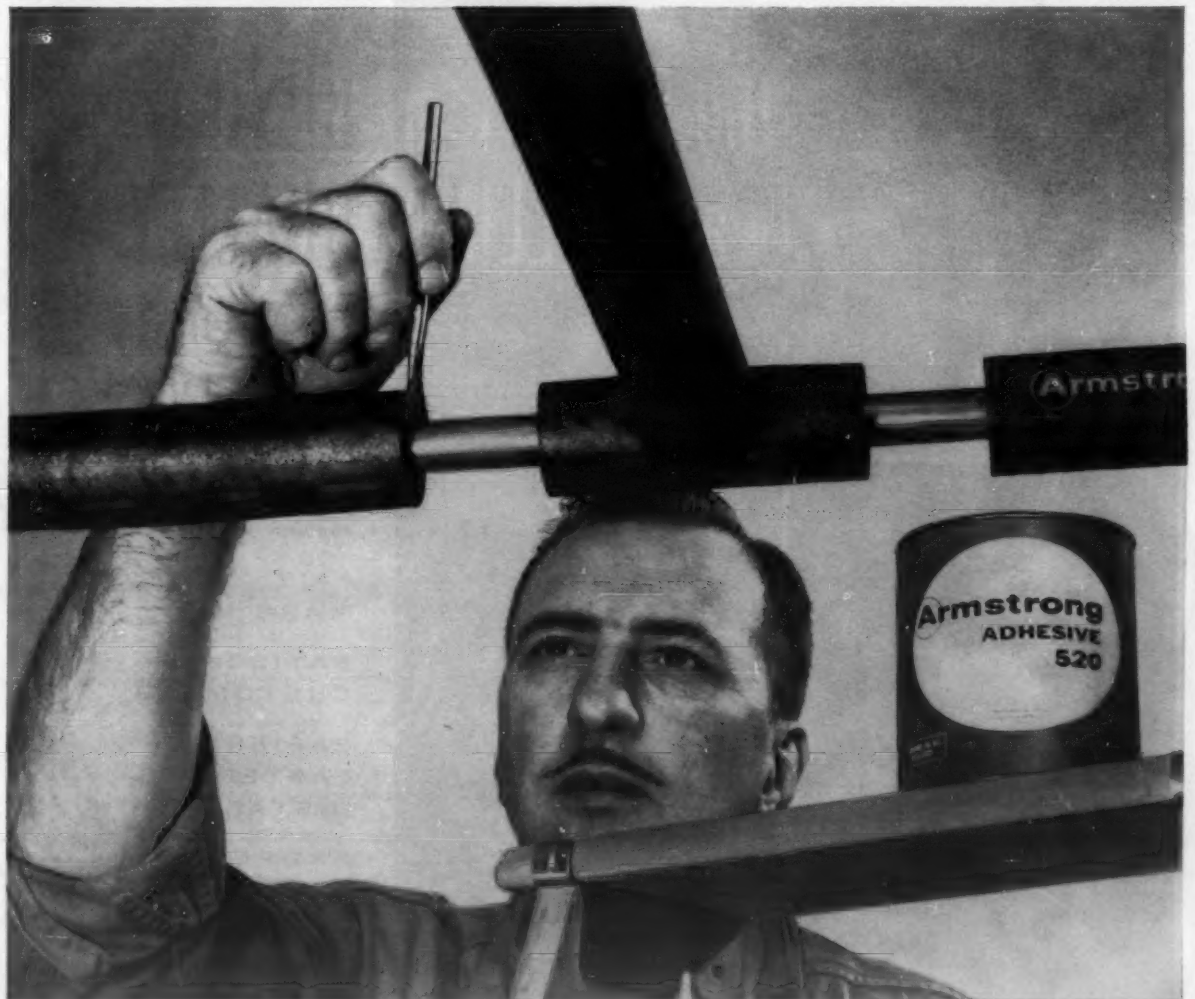
Called Titus series "TMD" diffusers, these outlets are available in an almost unlimited variety of air patterns to suit nearly any space condition.



One Man Can Move 22 Ft. Freezer Case

Double-unit freezer cases up to 22 ft. in length can be moved safely by one man with a new floor hoist called the "Saf-T-Lift," introduced by Erickson Industries, Inc., Dept. AC&RN, River Falls, Wis.

Saf-T-Lift refrigerated case moving hoist is claimed to lift up to 10 in. off the floor and carries loads up to 2,000 lbs. A 2 x 4 board over the winch operated cable under the cabinet prevents separation of double units while they are being moved.



Waterproof joints are assured when you use Armstrong 520 Adhesive. The cement forms a strong bond that resists deterioration with age.

520 Adhesive assures vapor-tight joints on Armaflex insulated lines



Look for Andy Armaflex on displays or window or door decals. He identifies the wholesaler who sells Armaflex.

Cold line insulation must be sealed tight against vapor if it is to stay dry and efficient in service. For a tight job, vaporproof Armaflex pipe covering should be applied with vaporproof 520 Adhesive. Its waterproof bond provides an excellent seal at all joints, grows stronger with time, and resists deterioration as it ages. 520 Adhesive is easy to use. A thin brush coat is applied to both surfaces to be joined, allowed to dry, and the surfaces are pressed together.

This adhesive is the only sundry material required for the installation of Armstrong Armaflex. No bands, twine, protective coatings, canvas, or cements are necessary. Fitting covers are made up from miter-cut Armaflex pieces, assembled with 520 Adhesive.

Full details on Armstrong 520 Adhesive, as well as Armaflex Pipe Covering, are contained in free descriptive folder. For your copy, write today to Armstrong Cork Company, 2206 Parsons Street, Lancaster, Pennsylvania.

Armstrong INSULATIONS

TECHNICAL CENTER

By Frank J. Versagi, Technical Editor

Copper Tubing (1)

How much difference, if any, is there between copper water tube and refrigeration tube?

Why is copper tube ordered by O.D. in some instances and by nominal size in others?

In radiant heating systems, what kind of copper tube goes into ceiling coils and what kind into floor slabs? What about prefabricated coils?

How about the diverse discount structures and distribution policies for different types of wholesalers, jobbers, distributors, and dealers?

For a material which has found such wide acceptance, copper tube suffers from an unusual amount of confusion

about its terminology and use. Even people who have handled or purchased copper tube and fittings for years are not immune to irritations caused by erroneous conceptions concerning sizes or applications of the several types of copper tube.

This series of articles will review the development and present status of copper tube and its use in air conditioning (heating and cooling), refrigeration, and plumbing. The series will end with a summary of ferrous pipe and plastic tube.

When one first considers copper tube, he is met with an impressive array of terms. Letters are used—K, L, M, DWV. Terms like dead soft, hard temper, hard drawn, light annealed are encountered. Water

tube is used for non-water work; refrigeration tube sometimes seems to be identical to water tube, but at other times seems different. Commercial tube is tossed in when special applications are considered.

It is necessary, therefore, to be aware of the actual significance of this terminology before one can effectively purchase or handle copper tube.

The development of the solder fitting and integrated copper tube in this country is generally attributed to Mueller Brass Co., Port Huron, Mich., which received a patent in July, 1930. Until this development, copper tube was uneconomical in most uses, since it had to be produced to the same dimensions as iron pipe so that it could be threaded.

With the development of the solder fitting, however, it became possible to use a thinner wall on the copper tube and bring the material into practical

Table 1—Dimensional Comparison of Copper Water Tube and Refrigeration Tube

Nominal Size	O.D.	(All Dimensions In Inches)				Refrigeration Service
		K	L	M	DWV	
		— Water Tube —				
1/8	1/8	...	...	...	...	.030
1/4	1/4	...	...	...	...	.030
3/8	3/8	...	...	...	...	.030
1/2	1/2	...	...	...	...	.032
3/4	3/4	.035	.030	...	...	.032
1	1	.049	.035	.025	...	.032
1 1/4	1 1/4	.049	.040	.028	...	...
1 1/2	1 1/2	.049	.042	...	...	...
2	2	.065	.045	.032	...	...
2 1/2	2 1/2	.065	.060	.035	...	...
3	3	.083	.070	.058	.042	...
4	4	.134	.110	.095	.058	...

Plumbers talk nominal; hydronics (wet heat) and refrigeration people talk O.D.

consideration. Maintaining a constant O.D. so that the same solder fitting could be used for

all wall thicknesses, the several wall thicknesses were developed based on experienced judgment which considered burst pressure, safety factor, corrosion resistance, and equivalence to iron pipe.

Three series of wall thicknesses were developed. At first the three series were designated by letters A, B, C. The Navy, however, was already using the alphabet through J to designate pipe sizes, so the letters were changed to the present K, L, and M. In any given nominal pipe size, K has the thickest wall; M has the thinnest wall. Thus, when speaking of 1-in. nominal copper tube, the respective wall thicknesses are: K, 0.065; L, 0.050; M, 0.035.

In all cases, of course, the O.D. remains constant to accommodate the solder fitting; the I.D. changes with the wall.

Copper water tube is the term normally applied to that group of tubes from 1/4-in. through 6-in. nominal diameter—in types K, L, and M. The term does not mean that such tube can only be used with water. Actually, this range of sizes is used in handling many liquids and gases including refrigerants in residential, commercial, and industrial work. On order, copper

(Continued on next page)

the PAY-OFF in...BUYING
and SELLING...QUALITY

is money in
your pocket

Increased profits for you come from Fraser-Johnston top quality engineering and construction which assure you...

FAIR
MARGIN

SATISFIED
CUSTOMERS

EASIER
FASTER
INSTALLATION

PROPERLY
SIZED
INSTALLATIONS

FEWER
CALL BACKS

Fraser-Johnston's basement, upflow, counterflow and horizontal furnaces with matching coils and condensing units make up today's "value line of the air conditioning industry."

Write for complete catalog and prices.

Happy, comfortable, healthy
air conditioning
users measure
our success

FREE!

the only
CAPILLARY
reference GUIDE
for the industry

NO
GUESSING
CUTTING
ADJUSTING
NOISE
TROUBLE

The trend for economy and efficiency is engineered Capillaries. By all laws of refrigeration and physics demand a custom designed Capillary. A Sealed Unit Guide will help you order the right Capillary for the job!

Sealed Unit Parts Co., Inc.
1178 E. 180th St. • New York 60, N. Y.
Send CAPILLARY Guide and prices
Name _____ City _____
Address _____ Zone _____ State _____



Manufactured by

Fraser-Johnston

OVER A QUARTER CENTURY OF LEADERSHIP • 1900 • 17TH STREET, SAN FRANCISCO, CALIFORNIA

Copper Tubing--

(Continued from preceding page)
tube can be obtained up to 26 in.

One confusing point is the fact that in referring to copper tube plumbers talk in nominal sizes, while refrigeration and hydronics (wet heat) people talk in O.D. sizes. Thus, if a plumber orders "100 ft. of 3/4-in. tube," he is asking for tube with 1/2-in. O.D. A refrigeration serviceman placing the same order would get 3/4-in. O.D.—1/4-in. nominal!

So long as the supplier is aware of who is ordering, there is no great problem, but wrong sizes are sent out every day based on this misunderstanding alone.

The problem can become even more involved when fittings are ordered. Many wholesalers list fittings only by nominal size. When hydronics or refrigeration people order fittings, the supplier converts the order to the appropriate sizes. However, very often the purchaser has already converted in his own mind and orders fittings based on equivalent O.D. sizes for his tube. Not realizing this, the supplier converts again, and a batch of wrong sizes go out.

This seems a situation that will have to be lived with. On this subject, A. I. Heim, research engineer for Copper & Brass Research Association, points out that the practice of designating copper water tube by nominal size "has received wide acceptance, and it would be very difficult to change this practice, particularly as the copper water tube sizes would become very awkward if expressed, for example, 1 1/8 in. instead of 1 in."

Study of Table 1 will readily reveal that the actual O.D. is always 1/8 in. more than the nominal size.

In a later article will discuss the specific uses of the three types (thicknesses) of copper tube. For now we will continue a discussion of terminology.

Latest addition to the list of copper tube types is DWV—recommended for drainage, waste, and vents—actually, for so-called "no-pressure" work. DWV has the thinnest walls of all nominal copper tube sizes. See Table 1.

(To Be Continued)

We Specialize In Cleaning & Balancing Large Air Conditioning and Ventilating Duct Systems

We Go Anywhere
**AAA VENTILATION
CLEANING SERVICE**
Ralph Fields
500 W. Willis, Detroit, Mich.
Phone Te 1-2707

Trying to find
the right man for a
hard-to-fill vacancy—
the NEWS' Classified
Ads are read by your
man.
Place your ad today!

H. S. Whiting Retires After 48 Years at Buffalo Forge Co.

BUFFALO—President Edgar F. Wendt of Buffalo Forge Co. announced the retirement of Herbert S. Whiting, vice president, secretary, and director of the company who had been with the firm 48 years.

Whiting started in 1909 as a clerk in the order department, rising to become a junior officer in 1917.

He was elected a director shortly afterward and was promoted to vice president about ten years ago.

Wendt also announced the promotion of Theodore M. Dillaway to secretary. He has been an assistant vice president since 1952 and general office manager since 1956, according to the announcement.

RACCA Receives New Membership Requests

CLEVELAND—Reporting that membership of the Refrigeration & Air Conditioning Contractors Association continues to expand, Ray Kromer, executive vice president, announced that two newly-formed local associations—RACCA of Tacoma-Olympia and RACCA of Mid-Hudson—have applied for membership in RACCA National.

Membership applications have also been received from Wm. J. Kramer of Kramer & Co., Inc., Philadelphia, and contracting firms Air Comfort, Inc., Griggs, Inc., and Gulf Refrigeration, all of Florida, Kromer said.

RACCA committees and board of directors will meet at the Edgewater Beach hotel in Chicago June 19-21. This will be the directors' third quarterly meeting.

Feb. 5-8, 1962

Detroit To Be Scene of 12th Exposition of Refrigeration, Air Conditioning Industry

WASHINGTON, D. C.—The 12th Exposition of the Air Conditioning and Refrigeration Industry will be staged in Detroit Feb. 5-8, 1962, the board of directors of the Air-Conditioning & Refrigeration Institute confirmed at a meeting held in Hot Springs, Va., in connection with the annual meeting of the institute.

The Detroit dates had been tentatively reserved pending action of the board.

The Industry Exposition will be housed in Detroit's new Convention-Exhibit building, a part of the city's new civic center. Halls "B" and "C," with a gross area of 197,000 sq. ft., will be used. The new buildings, now

under construction, are expected to be completed next January.

Meanwhile, preliminary plans are going forward for the 11th Exposition of the industry, scheduled for Nov. 2-5, 1959, at Atlantic City, N. J. Appointment of an Exposition Committee for the show is expected to be announced shortly by Don V. Petrone, newly elected president of ARI.

For Your Reprint Copy

"Emergency Diagnosis, Repair of Hermetic Unit Electric Components," by John L. Zant, mail this ad with your name and address to: Air Conditioning & Refrigeration News, 450 W. Fort, Detroit 26, Mich.
Only 25¢ each.

Here's how **YOU**
Can make **MORE**
Profit as a

Polar Chips

**AUTOMATIC ICEMAKER
FRUIT JULEP 'SLUSH' MAKER
AND DRINKMAKER
Distributor**

Here is a field that offers real opportunity for lasting success and good earnings. Polar Chips Mfg. Co. is now offering money-making distributorships to qualified people. If you have the necessary requirements and a sincere desire to get ahead, you can profit by handling the Polar Chips line.

You need no special knowledge or experience to make money with Polar Chips products. Our factory-employed field supervisors will personally train your sales and service departments to get you off to a really fast, profitable start. Get the facts today. Write us about your business experience and a personal interview will be arranged. Please give your phone number also.

SEE THE COMPLETE LINE BELOW



525 to 615 lbs. daily. Engineered to produce rated capacities at typical summer conditions.



'SLUSH' MAKER

High net profit from 200 cups of new different, delicious fruit 'slush' per hour.



75 lb. per day capacity. Has its own storage bin. Makes entirely new type of small CUBE ICE.



272 to 326 lbs. daily. Completely automatic. No moving parts in the ice making compartment.



422 to 510 lbs. daily. All models have interchangeable storage bins. No stooping or bending.



29 ICEMAKER
MODELS AVAILABLE

MAIL
TODAY

DRINK- MAKER

Saves 65% on bottled drinks. 96% on club soda. Gives 300 perfect soft drinks every hour at just 1 1/2¢ each.

FOR ADDITIONAL INFORMATION WITHOUT OBLIGATION MAIL THIS HANDY COUPON TODAY TO:

POLAR CHIPS MFG. CO.

P. O. Box 4398, 3501 Biway St.
Fort Worth, Texas

NAME _____

ADDRESS _____

CITY _____

STATE _____

PHONE _____

THERE IS A POLAR CHIPS MODEL FOR EVERY NEED!



Air Distribution Requirements In Year-Round Air Conditioning

Part 2—Fundamentals of Air Handling

By Frank D. Klein, Chief Engineer, Governair Corp.

With the foregoing information on Formulae for calculation, consider again the various types of Fan equipment, particularly the three centrifugal types: (a) Forward Curve, (b) Backward Curve, and (c) Radial. Of the three, the Forward Curve blade is most commonly applied and recognized.

To better understand what happens to air when it enters the inlet of a Forward Curve blade wheel, what happens to it in the wheel itself and how it reacts when it leaves the wheel, in relation to the scroll, refer to Fig. 22 to classify the type fan

we are discussing; then refer to Fig. 23 where we see the three types discussed and the action of air handling in a Forward Curve blade fan as compared to the other two types.

The resultant motion of the air leaving regardless of the type becomes directly related to discharge to the Angle of Diffusion, which is adjacent to and is usually the extended discharge plenum or duct takeoff.

Nevertheless, the important observation here, in order to differentiate between types, is to note:

(a) The resultant motion of

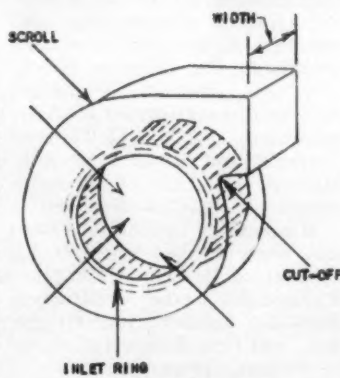


FIGURE 22.

the air leaving the wheel,

(b) The motion imparted to the air as a result of the shape of the blade, and

(c) The motion imparted to the air as a result of the wheel rotation. The pros and cons of the different type wheels were previously discussed.

Presented in previous material was the formula for obtaining the Mechanical Efficiency, and in turn the formula for computing the Total Efficiency, which is a function of both Mechanical Efficiency and Static Efficiency.

The answers to air handling problems as influenced by that segment of the total problem effected by the fan or blower equipment is specifically tied up with the "operating" efficiency, or more commonly known as the Mechanical Efficiency plus the Static Efficiency which becomes known as the Total Efficiency.

Contrary to some authorities, it is more practical to align the two for the Total Efficiency, than to adopt the practice of using the Theoretical Horsepower over Brake Horsepower method where one assumes no losses and uses 100% as the index to efficiency.

Refer to Fig. 24 wherein there have been plotted Typical Performance Characteristics of Forward Curve Blade Centrifugal Blowers. Here horsepower is plotted against static pressure to yield (a) a percent shutoff static pressure index, (b) a percent free delivery horsepower to result in (c) a percent free delivery capacity. This graph is a Standard Index to Efficiency in this type of fan, in the belief of this author, and is a standard for determining the so-called operating efficiency.

Note in Fig. 24, on the Static Pressure Curve, points "A" and "B." These are the ranges for maximum efficiency in the respective relationships to the other indices. However, it must be said that under certain favorable other circumstances, extensions beyond "A" can and are applied. Note the loss in Percent Free Delivery which accompanies such an adoption. The peak or apex of the Static Pressure curve, when surpassed def-

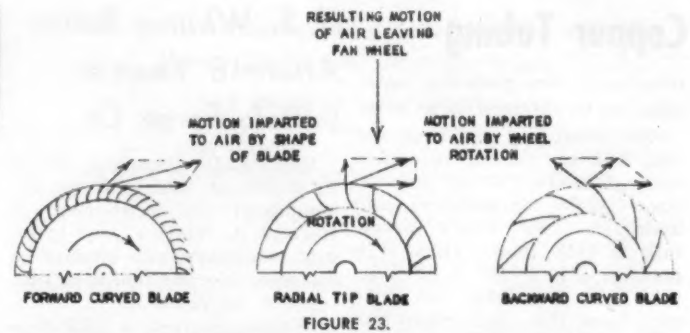


FIGURE 23.

nitely enters the Field of Operating and Efficiency Instability. Calculated as:

There are some "General Fan Laws" which should be understood. These are briefed by Richard D. Tutt in his text "Principles of Air Distribution."

They are:

1. THE RELATION OF VOLUME TO SPEED

The amount of air delivered by a fan will vary in direct pro-

portion to the speed of rotation.

$$Q_n = \frac{S_n \times Q_o}{S_o}$$

Where:

Q_n is equivalent to c.f.m. at new speed.

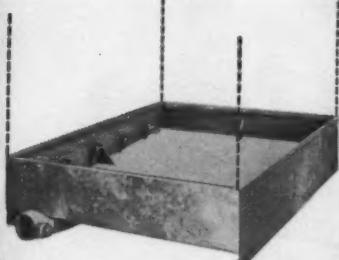
Q_o is equivalent to c.f.m. delivered at previous speed.

S_n is equivalent to r.p.m. of

(Continued on next page)

Another First from DOVER

The First Packaged Cooling Tower with SELF-CLEANSING BASIN and ALL-PURPOSE Right-Angle UTILITY SUMP



SERIES CF Horizontal Induced Draft 2 to 200 tons capacity

Dover adds another first to an already impressive list of achievements in the cooling tower industry. The Dover self-cleansing basin and all-purpose right angle utility sump bring you such advantages as:

SLOPING BASIN . . . basin collects all mud and debris in one section for easy removal through sump flush-out opening.

MUD RISER PROTECTS PUMPING SYSTEM . . . suction line and pump are protected against air intake and harmful foreign matter.

DRAIN DRY FEATURE . . . right angle sump can be adjusted so that basin drains dry each time system shuts off . . . simplifies servicing and winter shut-down.

EASY FIELD HOOK-UP . . . right angle sump provides bottom suction with side pipe-up . . . eliminates need of costly grillage to elevate tower. Tower rests on its own skids.

DOVER
MANUFACTURING COMPANY
Dept. 103, 3117 Weatherford Avenue
Independence, Missouri

FULL DETAILS . . . are yours for the asking. Just a note will do. We'll send you all the information you want and need on the all new Dover Series CF towers. Write today!

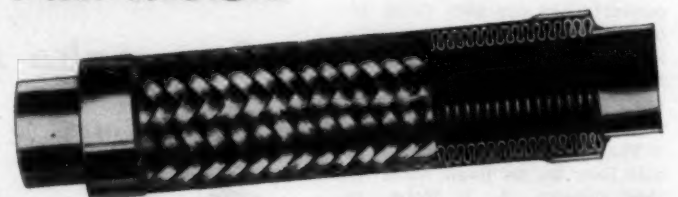
SEND FOR REPRINTS

Product Knowledge, Protective Maintenance, Trouble-Shooting, Adjustment, Repair of Electric Motors.

Only 40¢ each.

For your copy, clip this ad and mail with name and address to: Air Conditioning & Refrigeration News, 450 W. Fort, Detroit 26, Mich.

For Compressor Piping that's NERVOUS In service . . .



Install **FLEXON VIBRA-SORBERS®** for effective vibration control

NOW AVAILABLE FROM FLEXONICS
Flex - O - Tube synthetic Freon-resistant hose for refrigeration and air conditioning service. Write for information.

Flexon Vibra-Sorbers® are of all-metal construction with excellent resistance to corrosion and fatigue, remaining gas-tight under prolonged vibration.

Highest cleanliness standards are maintained throughout manufacturing—delivery is in airtight polyethylene bags.

Continuous research and quality control combine with manufacturing know-how to insure a product of higher value with lower costs to you in the long run.

Genuine Flexon Vibra-Sorbers, made only by Flexonics Corporation, are U.L. listed in sizes 3/8" through 1 1/2" for both high and low side service. Ask for them by name. For full details write for Bulletin 139.



Flexonics Corporation
CHICAGO METAL HOSE DIVISION

1415 S. THIRD AVENUE, MAYWOOD, ILLINOIS
Manufacturers of flexible metal hose and conduit, expansion joints, metallic bellows and assemblies of these components.
In Canada: Flexonics Corporation of Canada, Ltd., Brampton, Ontario

FOR AIR CONDITIONING the Most Flexible VALVES ever made



PRIMORE ROTALOCK

The Rotalock is a new type of detachable valve that permits the positioning of suction or discharge valves to rotate to the most desired angle, or in direct line with tubing.

Locking position may be altered as required. The Rotalock is the most flexible valve ever designed.

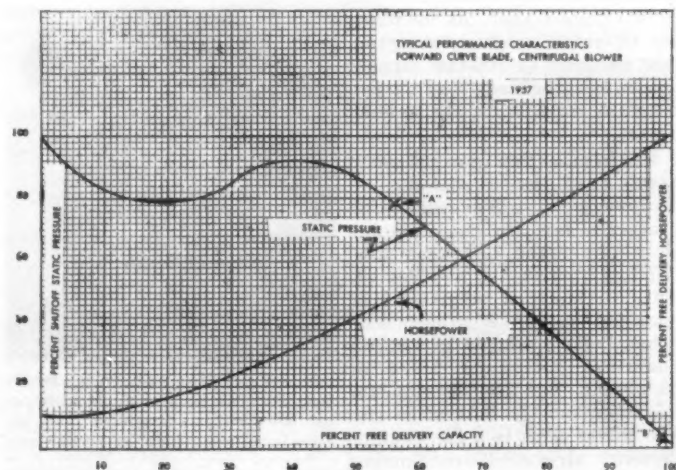
THE PRIMORE BREAK-AWAY

The Break-Away valve is for remote air conditioning installations. Assures fast, positive connection of tubing from evaporator to condensing unit. Requires no field pre-assembly, no field soldering, no field cleaning and no field charging. Condensing unit and refrigerant tubing are all pre-charged ready for hook up. Will not lose charge.

THE NEW TEFLON FIBER SEAL is now a standard for all Rotalock and Break-Away valves. The Teflon Seal, finest in the industry, is flexible, tough, resists heat, most solvents and chemicals. Not affected by changing weather conditions. Valve may be loosened or tightened often without affecting its sealing qualities.

Primore Sales, Inc.
2460 South Main Street • Adrian, Mich.

Ask for FREE Catalog



Air Distribution--

(Continued from preceding page)

Fan at new speed.

S_0 is equivalent to r.p.m. of Fan at previous speed.

When the Speed of Rotation and Volume Capacity is known and the problem becomes one where Volume Capacity is to be raised to a new value, the new speed can be,

Calculated as:

$$S_n = \frac{Q_n \times S_0}{Q_0}$$

much as follows, where, for instance, the fan is operating at 1.0 in. wg. Static Pressure and is delivering 5,000 c.f.m. at a speed of rotation of 500 f.p.m. The problem is to obtain the resultant c.f.m. if the speed of rotation is raised to 600 f.p.m. which can be,

Thus,

$$5,000 \times \left[\frac{600}{500} \right] = 6,000 \text{ c.f.m.}$$

Most air conditioning work is involved with fans driven by belts and pulleys. As a result when it is desired to change the operating characteristics as to speed, a new pulley is selected or the "pitch" diameter of an adjustable pitch type is changed. In the above example the fan was driven at 1,750 r.p.m. at the motor; with the fan itself running at 500 r.p.m. the motor obviously had a 6-in. pitch diameter pulley, and the fan a 21-in. pitch diameter pulley.

Thus for the fan to run at 600 r.p.m., the pitch diameter of either the fan or motor pulley must be changed—or both, which can be,

Calculated as:

$$\frac{S_m}{S_f} = \frac{P_f}{P_m}$$

Where:

P_f equals pitch diameter of fan pulley in inches.

P_m equals pitch diameter of motor pulley in inches.

S_f equals speed of fan in r.p.m.

S_m equals speed of motor in r.p.m.

(To Be Continued)

Bihr Gets Los Angeles Building & Safety Post

LOS ANGELES—James E. Bihr has been appointed secretary of the Board of Building & Safety Commissioners of the city of Los Angeles.

He succeeds Wayne B. Quinlan who becomes resident engineer on the Pacific coast for the American Iron & Steel Institute.

Westinghouse Adds Heat Pump

STAUNTON, Va.—Designed for the commercial and large home market in the South, a 7½-hp. remote air-cooled heat pump has been added to its line by the Air Conditioning Div., Westinghouse Electric Corp. here.

The indoor section measures 28 by 41 by 42 in. and is designed for ceiling suspension or installation in attic or crawl space.

A special discharge grille is available for "free blow" installations. Outdoor section may be located adjacent to the building or on the roof.

Designated as Model RHP-73, the new unit is said to have cooling capacity of 72,500 B.t.u. per hour and heating capacity of 112,000 B.t.u. per hour at ARI heat pump standard rating conditions.



INSTALLATION of 7½-hp. Westinghouse heat pump showing indoor section.

SEND FOR REPRINTS

Product Knowledge, Protective Maintenance, Trouble-Shooting, Adjustment, Repair of Electric Motors.

Only 40¢ each.

For your copy, clip this ad and mail with name and address to: Air Conditioning & Refrigeration News, 450 W. Fort, Detroit 26, Mich.

NOW-

increase profitable sales with a complete line of **VILTER** ammonia refrigeration equipment



Substantial sales are now possible in numerous areas for distributors prepared to offer a complete line of ammonia refrigeration equipment. With the versatile Vilter ammonia line, you can handle practically any commercial and industrial refrigeration application in your area on an attractive competitive basis.

The Vilter ammonia line consists of VMC compressors, 15-250 ton capacities, booster compressors, plus a wide range of associated refrigeration equipment—evaporative condensers, blast freezers, brine coolers, ice machines, shell and tube condensers, and cooling coils among others.

Vilter distributors enjoy many sales advantages:

- ★ Outstanding line of refrigeration equipment—known for its dependable service, long life, efficient, economical performance.
- ★ Equipment backed by ninety-one years of intense activity in engineering and research.
- ★ Strong home office support. Engineering application counsel is always available.
- ★ Wide acceptance of Vilter equipment in all industries using refrigeration.
- ★ The Vilter line is advertised widely in the trade press.

It will pay you to consider the Vilter line of ammonia refrigeration equipment for your area. High sales potential. Good profits. For distributors interested in the entire Vilter line there is a full Freon compressor line plus air conditioning equipment. Don't wait! Get acquainted now. You will like our way of doing business.

Vilter Shell and Tube Condensers—3 to 500-ton capacities.

Vilter Polarflake Ice Maker—available up to 5-ton capacity.

Vilter Pakicers—1 to 30-ton capacities.

Vilter Evaporative Condensers—50 to 300-ton capacities.

Vilter Zer-O-Disc Fin Coils—provide slow, even, positive air circulation.

Vilter VMC Ammonia Compressors—15 to 250-ton capacities.

Vilter

REFRIGERATION and AIR CONDITIONING

THE VILTER MANUFACTURING COMPANY • Milwaukee 7, Wis.

Ammonia & Freon Compressors • Pakices & Polarflake Ice Makers • Ammonia Liquid Transfer Systems • Evaporative & Shell & Tube Condensers • Pipe Coils • Valves & Fittings

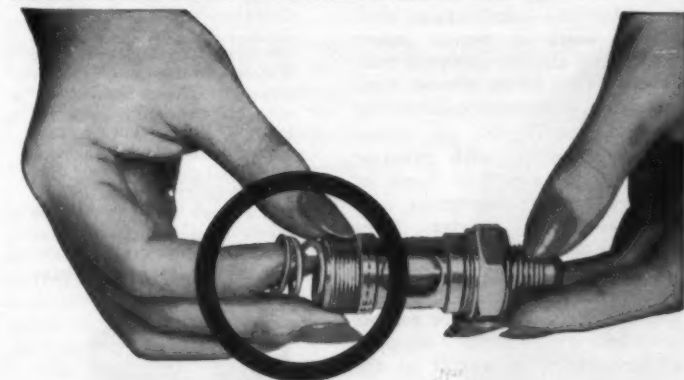
WRITE IN NOW FOR COMPLETE INFORMATION

The Vilter Manufacturing Company, Dept. Q2 2217 S. First St., Milwaukee 7, Wis.

Gentlemen: Please send me the checked information—

- ☐ Distributor information.
- ☐ Ammonia compressors and refrigeration equipment.
- ☐ Freon compressors.
- ☐ Air conditioning equipment.

Name.....
Title.....
Company.....
Address.....
City.....Zone.....State.....



SHE'S PUTTING SPRINGS IN E-Z-SEE LIQUID INDICATORS

To you, E-Z-See liquid indicators with spring compensated gaskets mean NO LEAKS—with Refrigerant 12 or Refrigerant 22—at operating pressures through 500 p.s.i. and operating temperatures up to 200° F. and down to minus 40° F!

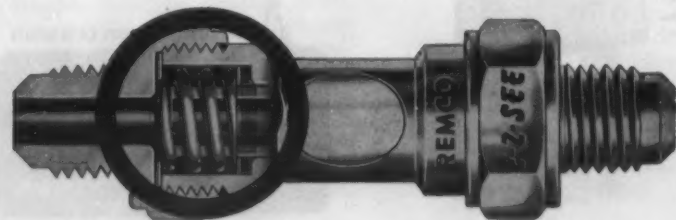
Double port, easy to see through, spring compensated E-Z-Sees are available with male flare x male flare, male flare x female flare and with extended sweat connections which permit soft or silver soldering without disassembly.

E-Z-Sees are also available with a very sensitive FLO indicator flap directly in the refrigerant stream. With this sensitive flap all variations in flow are instantly indicated.

The full story is given in Bulletin R-11. Write today for your copy.

AVAILABLE TO THE TRADE THRU WHOLESALERS

REMCO INC.
ZELIENOPLE, PA.



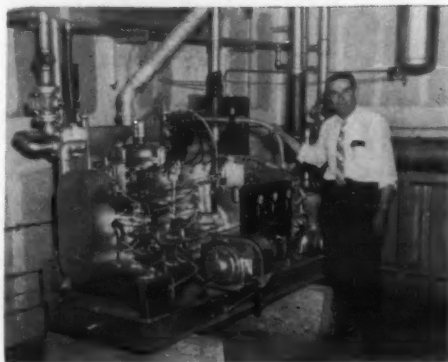
Gas Utility Air Conditioning Drive Could Benefit Entire Industry

(Continued from Page 1)

not but help convince more people of the benefits of air conditioning regardless of whether it's gas or electric powered.

One senses, too, that the gas industry has no plans, or even hopes, to dominate air conditioning. Instead, it would appear to want only a slightly larger share of the cooling load in summer while hanging onto its winter heating load.

Thus far its pickings in the residential field have been pretty slim. By the end of 1957 a grand total of 14,154 residential air conditioners were on gas utility lines, according to



COMMERCIAL and industrial air conditioning jobs can be handled by such units as the Ready-Power gas engine-driven compressor.

a survey of companies representing 86% of meters, says the American Gas Association.

This is about 2% of the more

than 600,000 central residential systems installed thus far.

It even falls well below the number of heat pumps in use, which at the end of 1957 amounted to 36,000, AGA tells its members. Of these heat pumps, AGA continues, an estimated 25,000 were installed during 1957, a year which saw

This is Part One of a two-part article. The conclusion will appear in a following issue.

1,535 gas air conditioners go into residences and 941 gas systems into commercial and industrial applications.

Sales could rise sharply this year, however. Arkla Air Conditioning Corp. in its annual report to stockholders says it has scheduled production of a minimum of 7,000 Arkla-Servel units in 1958. Of these, gas utility companies throughout the country have committed themselves to purchase 4,600.

Arkansas Louisiana Gas Co., the parent company of Arkla, could be the biggest purchaser of its own units. It led the nation in 1957 with sales of 465 gas units (compared to 89 in 1956), and its goal for this year is 1,500. Early indications are that it will hit this mark, the utility believes.

Arkla, meanwhile, is preparing to step production up to

20,000 units a year "as the market develops," and is "studying how units up to 700-ton capacity can be produced," the parent company reveals in its annual report.

Up to now, the gas industry hasn't had much variety of equipment to offer residential prospects for air conditioning. Only one make has been distributed nationally — Servel, which Arkla took over last fall. Another make—Weatherbuster—has been produced in limited quantities for some years in Oklahoma, but its distribution has been mostly limited to the Southwest. This is a gas engine-driven, air-cooled condensing unit.

The Servel absorption unit, in fact, hasn't been on the market for too many years. Initial development work started in 1934, and first practical working models were completed in 1939. Pilot plant operation for production began in 1940, but were interrupted by the war.

After the war production began in earnest. Early Servel gas units involved a steam generator to activate the absorption cycle for cooling and a steam coil for heating.

A direct-fired year-round unit was introduced in 1955, the design permitting a considerable reduction in dimensions. Essentially, this is the unit being produced today by Arkla in 3½ and 5-ton models.

Both the original and current models were water-cooled, usually with cooling towers.

Undoubtedly, this dependence on water has handicapped residential sales in recent years, which saw electric-powered residential units swing almost completely to air-cooled condensing.

Consequently, the gas industry is watching with greatest interest current field tests of the air-cooled absorption unit developed by Carrier. Now being handled by the company's Bryant Div., this unit employs a gas-fired refrigeration system in a separate cabinet for remote installation which supplies chilled water to a coil in the house heating system.

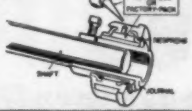


GAS INDUSTRY'S current all-out promotion efforts on residential air conditioning are being concentrated on this Arkla-Servel year-round absorption unit.

In the meantime intensive laboratory research, development, and testing are being sponsored by AGA and cooperating manufacturers on other types of gas air conditioning with emphasis on home units. The market for commercial

4
Ways
Viking
Gives
You
MORE
yours
for the
asking!

1 Industry's Only Blower Bearing with Built-in Journal



Lighter loading, longer life.

2 Industry's Only Interchangeable, Non-flexing Wheels



9" through 15" sizes; for quiet hi-speeds.

3 Industry's Most Advanced Private Research Facilities



At your disposal for air development problems.

4 Industry's Best Technical Information Service for Design Engineers



All you need to know about air movement.

VIKING
AIR PRODUCTS

5601 Walworth Ave.
Cleveland 2, Ohio

9" through 15" Blowers,
Blower Wheels,
Furnace Humidifiers

Gentlemen: Please send me more information about item 1 2 3 4
* Put me on the mailing list.

Name _____
Title _____
Firm _____
Address _____
City _____ State _____

**COMPLETELY
INTERCHANGEABLE**

**NEW Redmond TYPE AM-4
WITH NEW SHORTER LENGTH**

Stock One Motor to Accommodate All Mountings

1. The new AM-4 will replace all rear-mounting motors.
2. You can replace motors with peripheral mountings.
3. All-Angle Operation: designed for all-position mounting, vertical shaft up, shaft down, or any angle. Now you stock only one motor. The extra large oil reservoir is permanently sealed for life-time lubrication — and guaranteed not to leak oil in use or shipment.

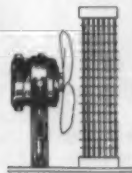


Redmond Distributors, Inc., Owosso, Michigan



Condenser Fan Motor
1½ Through 16 Watts

Your No. 1 Condenser Fan Motor for Replacement in the Air Conditioning and Refrigeration Fields



REDMOND DISTRIBUTORS, INC.
Owosso, Michigan.

- ☐ Send me your new AM-4 catalog sheet.
- ☐ Mail me your 4-page catalog describing the complete line of Redmond motors, blowers, fan blades, replacement kits, and accessories.

NAME _____
COMPANY _____
ADDRESS _____
CITY _____ STATE _____

**Remove Scale
quickly and
safely with
anco
CONDENSER
CLEANER**

You simply dissolve ANCO Condenser Cleaner in the sump while the system is in operation for effective results. Within 2 to 15 hours, depending on the thickness of the scale, the condenser tubes are cleaned. High head pressure caused by fouled tubes drops to normal and operating efficiency is restored. ANCO Condenser Cleaner can be safely used without damage to metals and is not hazardous to handle. Try it once and you'll use it always.



Keep cooling towers free of algae and slime with ANCO Algaecide.



Protect condenser against rust, scale and pitting with ANCO Water Treatment.

For all ANCO products see your wholesaler or write direct.



SPECIALISTS IN MAKING WATER BEHAVE

Anderson

Chemical Company, Inc.
Box 1424 • Macon, Georgia

and industrial air conditioning isn't being ignored, but in these fields the gas industry hasn't fared too badly, benefitting perhaps by the slightly larger variety of equipment available.

There is, for example, the 25-ton Servel-Arkla absorption water chiller which has been on the market for several years and is found in a variety of applications, including multiple installations.

Another factor in this market is Ready-Power Co. of Detroit, which has a successful record covering several years in its gas engine-driven compressor units ranging in size from 22 to 76 tons. These units employ an International engine direct connected to a Chrysler Airtemp radial compressor.

Through the years there have also been a number of gas engine-driven compressor jobs built up by contractors.

In the really big sizes there is the Carrier automatic absorption machine operating on low pressure steam or high temperature high pressure water from gas-fired boilers. This is available in models ranging from 60 to 700 tons.

AGA's Effort Began Back In 1954

AGA's present efforts to develop and promote gas air conditioning, especially residential, began in 1954 with the formation of its Task Group for Air Conditioning Research, which was charged with developing "at the earliest possible moment equipment which would strengthen the gas industry's position in the air conditioning picture," to quote Robert B. Smith, AGA manager of air conditioning research, speaking at the recent Research and Utilization conference in Cleveland.

"The first action of the task group in 1954 was to have prepared by A. D. Little and Battelle Memorial Institute two surveys to review the gas air conditioning field and to recommend logical approaches to the problem," Smith explained.

"The resulting reports . . . indicated several paths of attack, including the use of internal combustion engines as a potentially quickly realizable solution. Also," Smith said, "during 1954 conferences were initiated with individual manufacturers who were known to be engaged in or potentially interested in gas air conditioning with the objective of encouraging their efforts or entrance into this field."

5 Current Research Projects of AGA

Various research projects have been conducted under AGA auspices since then, but current efforts appear to be concentrated on these five: jet pump, engine-driven compressor, open cycle wet absorption system, Swiss sorption system, and the free piston unit.

Jet pump. Initially developed and field tested (five units) by Rheem. Principle involved is an old one. Vapor flowing through a tube creates a low pressure area, which vaporizes refrigerant (de-ionized water). Main mechanical problem appears to be a pump that will deliver about 100 lbs. of water per hour from low pressure side to high

(Continued on next page)

Where Gas Industry Stands On Equipment for Air Conditioning

Residential

In Production

Arkla-Servel—absorption unit; 3½, 5 tons; water cooled.
Weatherbuster—gas engine-driven compressor; 3, 5, 7½ tons; air cooled.

Under Field Test

Bryant (Carrier)—absorption unit; air cooled.

In the Lab

Jet pump—initiated by Rheem; five units field tested.
Engine-driven compressor—initiated by Coleman; several units field tested.
Open cycle wet absorption system.
Swiss sorption system—demonstrated.
Free piston unit—demonstrated.

Commercial and Industrial

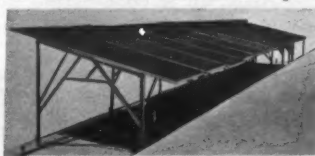
In Production

Arkla-Servel—absorption water chiller; 25 tons.
Ready-Power—gas engine-driven compressor; 22 to 76 tons.
Carrier—absorption water chiller; 60 to 700 tons.

Edwards New Airvec Supplies 90 Tons Of Air Conditioning To New Bowling Center

EDWARDS New Airvec Condenser Utilizes Convection Principle. Eliminates Noise, Motors, Maintenance, Structural Problems.

Heat rising from the horizontal condenser creates a chimney-like draft that continues to draw fresh air through the unit. Manufactured in 2, 3, 5, and



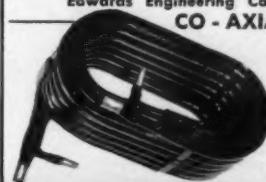
7½ ton basic sections, which then can be assembled in multi-sections for unlimited capacities up to hundreds of tons.

This new principle eliminates: Noise, Motors, Wiring, Maintenance. Operating Problems. WRITE Airvec Dept.,

Edwards Engineering Corp. Manufacturers Agents Inquiries Invited.

CO - AXIAL FREON CONDENSERS

- COST REDUCED 30% to 40%
- CONDENSER WATER REDUCED 35%
- Refrigerant Charge Reduced
- Stabilizes Capillary Performance
- Smaller Cooling Towers Required
- Shipping Weight Reduced
- Many Shapes and Sizes Available
- Sea Water Models Available



EDWARDS ENGINEERING CORP.
103 ALEXANDER AVENUE • POMPTON PLAINS, NEW JERSEY

No. 2 in a series on better compressor servicing



Herman Hermetic Hints

ON Easy Electrical Replacement

NO CHANCE OF ERROR...

40 Basic Kits Service ALL

Tecumseh Compressors

From 1/12 Through 1 HP



In response to the widespread approval of Tecumseh relay and overload replacement kits introduced last year, we have expanded this valuable service application to 40 kits covering all Tecumseh compressors from 1/12 through 1 HP. These now include 5 kits for Pancake, 21 kits for single cylinder, and 14 kits for twin cylinder compressors.

By maintaining an adequate stock of these basic kits your authorized Tecumseh wholesaler can eliminate all guesswork in the replacement of electrical components on over 75% of the Tecumseh compressors now in service. The kits contain everything that is necessary for

overload and relay replacement and can be installed on the compressor as indicated, regardless of original equipment. In addition to the correct overload and relay, where necessary, other parts to provide for glass terminals and different sized covers are provided. Instructions and wiring diagrams have been included in every kit to guarantee foolproof connection. To order you need to know only: model number, horsepower, high or low torque, type of motor, voltage, and back pressure. You'll save inventory problems and be right every time with a genuine Tecumseh approved replacement from a Tecumseh authorized wholesaler.



The Leader Serving Leaders In the Air Conditioning and Refrigeration Industries

TECUMSEH PRODUCTS COMPANY

MARION, OHIO

TECUMSEH, MICHIGAN

EXPORT DEPT: P. O. Box 2280, 24530 Michigan Ave., W. Dearborn, Michigan

Gas Utility Air Conditioning Campaign--

(Continued from preceding page) pressure side. Chief design problem is efficiency. Thus far these units have required 100,000 B.t.u. input to produce an effective 25,000 B.t.u. cooling output.

Engine-driven compressor After spending more than \$1,000,000 on this and other gas air conditioning projects, Coleman turned development over to AGA. In a cooperative program, D. W. Onan & Sons, Inc.

is working on a 5-ton air-cooled engine-condensing unit package. Endurance tests are under way to determine life and reliability.

Continental Motors Corp. is also working on a gas engine for air conditioning application. Aim is 10,000 hours of operation in unattended service. (Average air conditioning season is about 2,000 hours.) Over 3,500 hours have been achieved.

Open cycle wet absorption. Another Coleman project, this operates on the principle of drying hot, humid air from the conditioned space by direct contact with triethylene glycol, a liquid sorbent. Some sensible heat is then removed by a coil and cooling tower; then a direct water spray provides rehumidification and additional cooling of air by evaporation.

Swiss sorption unit. Air is first dried to extremely low relative humidity then cooled by evaporating moisture in the air. Numerous variations have been studied and several working models built. "As least an additional year of study and field testing will be required to evaluate the latest approach," cautions Smith of AGA.

Free piston unit. Principle involves a single cylinder containing a "free piston" (no connecting rod, crankshaft, etc.). Upper half of cylinder is a gas engine; lower half is a compressor using conventional refrigerants. Combustion of natural gas-air mixture in upper cylinder forces piston down, compressing refrigerant in the lower cylinder.

Extreme simplicity of this device combined with the known efficiency of the conventional refrigerant vapor-compression cycle holds great promise for residential air conditioning, and perhaps other applications, the gas industry believes.

Important design problem is maintaining an effective seal between the lower compressor section and the upper engine part of the unit.

A working model was demon-

strated in March, 1958, by Battelle Memorial Institute.

All in all, on these and other air conditioning research projects AGA expects to spend \$500,000 this year. Previously it had spent \$222,000 on such research in 1955, \$430,000 in 1956, and \$580,000 in 1957.

"It might be said that our work to date has been concerned primarily with the refinement or improvement of old ideas and with carrying these refinements to the operating prototype stage," Smith of AGA told the recent Cleveland conference.

"This was one of our first goals, and I believe we have come a long way to meet it," he said. "It appears that now is the time for us to approach the problem in a more basic manner to attempt to come up with a new or novel idea."

(To Be Continued)

Westinghouse Names Richard J. Sargent

PITTSBURGH—Richard J. Sargent, marketing and distribution director for the company's consumer products divisions, has been elevated to vice president of Westinghouse Electric Corp.

Sargent joined Westinghouse in 1936. He became general manager of the major appliance division in 1952 and general manager of marketing and distribution for consumer products divisions in 1956.

He is responsible for planning and directing the distribution programs for the appliance divisions at Mansfield, Columbus, and Newark, Ohio, and E. Springfield, Mass., television-radio division, Metuchen, and electronic tube division, Elmira.



The NEW Serviceman "Super-heat" Thermometers

Now check superheat EASIER...FASTER...BETTER

Now comes a revolutionary development in superheat testing. The kit illustrated here gives you the easier, faster, and above all the more accurate superheat readings you need for that all-important adjusting and setting of the expansion valve.

All the difficulties of testing with glass tube thermometers—positioning, reading, costly breakage—are wiped out. The small bulbs of these distant reading dial thermometers are easily attached exactly where they should be. The distant reading feature permits placing the dials where they can be readily seen and compared. The widely spaced one-degree markings in the testing zone assure far more accurate reading than is possible with the closely-spaced markings of glass tube thermometers.

Note the many features described opposite—particularly the method of insulating against ambient temperature... which assures more accurate readings... better results.

At their moderate price you can own these long-lived "Super-heat" Thermometers at a fraction of the cost of using the breakable, short-lived kind!

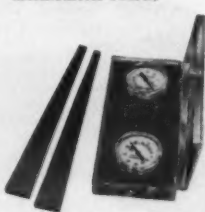
Write for facts or See Your Wholesaler

MARSH INSTRUMENT CO., Sales Affiliate of J.P. Marsh Corporation Dept. D, Skokie, Ill.

Marsh Instrument & Valve Co. (Canada) Ltd., 8407 103rd Street, Edmonton Alberta • Export Dept., 3501 Howard St., Skokie, Ill.

MARSH Refrigeration Instruments

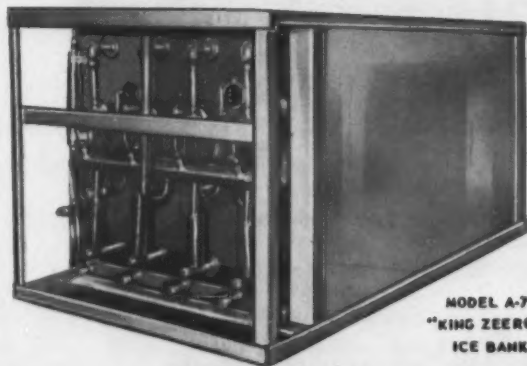
The "Super-heat" testing kit contains two identical, 2-inch dial-size thermometers (one for evaporator inlet and one for outlet) in attractive, highly polished brass cases. Dials are graduated -40° to $+65^{\circ}$ F. Widely spaced one-degree calibrations in testing zone are guaranteed accurate within one marking plus or minus. (Glass tube thermometers have crowded markings.) Each thermometer has a 12-inch capillary tubing. Bulbs are small for use in tight quarters. Kit contains two non-absorbent insulating wrappers for easy attachment of bulbs to evaporator tubing... also to insulate bulbs from ambient temperature. (Field studies have shown that for the highly accurate readings essential to superheat testing, ambient temperature must be insulated from thermometer bulbs.)



Thermometers and "wrappers" are neatly held in durable, transparent plastic box with convenient hinged cover, measures only 3" x 8" x 1 1/4".

Add a "King Zeero" ICE BANK to Your Refrigerating System for Effectual, Economical Air Conditioning

The "King Zeero" ICE BANK is designed to deliver 32° to 34°F. ice water for recirculation through air cooling coils in exactly the right amount when and where it is needed. It levels off "peak" and "valley" loads. Peak loads many times compressor capacity are easily handled. Ice Banks may be added to increase existing capacity. Refrigerant: Freon, Methyl Chloride or Ammonia.



MODEL A-7 "KING ZEERO" ICE BANK

The Patented Coils with Built-in Louvers opposed to the flow of water through the ICE BANK provide turbulence. This eliminates a mechanical agitator - insures all the water rubbing all of the ice. No upkeep or repair expense whatever.

The "King Zeero" Ice Storage System of water chilling has definite advantages over direct expansion, or other types of ice accumulators.

Saves power through smaller compressor requirement. Simple construction (no moving parts). Dependable in performance. Low operating and costs.

Let the ice stored during light loads take care of peak loads. The compressor need only handle the average daily load - not the peak.

CAPACITIES - 500 lbs. to 30,000 lbs. (72,000 B.T.U.'s to 4,320,000 B.T.U.'s) in a single unit. Multiple units may be installed.

THE KING ZEERO COMPANY
4300-14 W. Montrose Ave. - Chicago 41, Ill.
Manufacturers of Ice Builders - Ice Builder Cabinets - Ice Banks



Michigan Utility Employees Hear of Gas Cooling Plans

DETROIT—More gas-operated air conditioning should be on the market within the next year, according to plans of companies in the field.

This was revealed at a meeting of Michigan Consolidated Gas Co. sales employees by representatives of the American Gas Association, Carrier Corp., Ready-Power Co., and Arkla Air Conditioning Co.

W. W. Selzer, chairman of AGA's air conditioning committee, reported that Comfort Products Corp. will put gas-operated 3 and 5-ton units on the market soon. He predicted that Bryant Div. of Carrier Corp. would have an add-on 3-ton water-chiller on the market next year—at least in limited quantities.

Trane Co., he said, would be on the market with large volume equipment in 1959.

G. O. Galloway of Arkla Air Conditioning Co. indicated that his company is developing absorption water chillers of a larger size than the 25-ton units now being produced. Selzer indicated that Arkla is presently working on a 100-ton chiller.

N. K. Hall, manager of the air conditioning and refrigeration division of Ready-Power Co. said that his firm was going to introduce a 15-ton gas-operated, water-cooled condensing unit in September and larger units next year.

Selzer also reported that the Swiss sorption unit shows great promise and that a contract between A. O. Smith Corp. and the Lizenzia Corp. of Switzerland has been signed recently for further development of the unit.

Looking for
a Business to Buy . . . ?
Check the
Business Opportunities
Section
in the classified
advertising columns.

Servicemen Agree...

BEACH-RUSS PORTABLE VACUUM PUMPS

are made with features they desire

High Performance Characteristics

Completely Portable



Automatic Lubrication

Single- or Two-Stage

Long Life



Quiet Operation

Minimum Attention

Valves Eliminated

Beach-Russ Vacuum Pumps are also made in types and sizes for evacuation and testing of refrigeration equipment on a production basis.

BEACH-RUSS COMPANY DEPT. 33
50 CHURCH STREET • NEW YORK 7, N. Y.

Send descriptive literature covering
☐ Model O Single-Stage Vacuum Pumps.
☐ Model A Two-Stage Pumps.

NAME.....
COMPANY.....
ADDRESS.....
CITY..... ZONE..... STATE.....

BEACH-RUSS CO.
50 CHURCH STREET NEW YORK 7, N. Y.

Grayson Equipment Buys Control of 92-Year Old Straus-Duparquet, Inc.

NEW YORK CITY—Control of the 92-year-old Straus-Duparquet, Inc., large producer and distributor of food service equipment, supplies, furniture, and furnishings for the institutional field, and manufacturer of commercial refrigerators and fixtures for retail stores, was acquired recently by Grayson Equipment Co., Elizabeth, N. J., maker of institutional food service and freezing equipment.

Facilities of the two companies, including Grayson's new plant at Elizabeth, are being consolidated and will operate under the name of Straus-Duparquet, Inc.

Grayson has purchased all of the firm's preferred shares from Standard Financial Corp. In addition, Grayson has issued a substantial block of new common stock for its business, plant, and other assets.

3-MAN TEAM TAKES OVER MANAGEMENT

A three-man team of Grayson executives took over the management of Straus-Duparquet.

Nathan Straus III, 41, who becomes chairman of the board and chief executive officer, formerly was with the predecessor company, Nathan Straus-Duparquet, Inc. for 15 years, holding the positions of executive vice president and director. He joined Grayson in 1957 as vice president, treasurer, and director.

Harry Greitzer, 49, new president of Straus-Duparquet, has been in the kitchen equipment business for 27 years. He is the president and founder of Grayson, and formerly was president and chairman of Viking Equipment Co., Newark, N. J.

C. W. Robbins, 36, new executive vice president of Straus-Duparquet, was a sales engineer with Nathan Straus-Duparquet for ten years before joining Grayson as vice president and director in 1957.

In addition to the three top officers who were named to the Straus-Duparquet board of directors, Harry Blumberg, vice president of the company, Henry S. Koster, financial consultant, and Morton Nash also were elected. Continuing on the board are: Arthur A. Turry, treasurer, Edward N. Brandriss, secretary, and Milton I. Schwartz, executive vice president of the firm's S. & M. Schwartz & Co. division.

SPERANS TO CONTINUE AS CONSULTANT

Samuel E. Sperans, who has resigned as president and director of Straus-Duparquet, Inc., will continue as consultant.

In 1957, the Straus-Duparquet sales volume was \$16,163,507, with operating net earning of \$173,304.

Straus-Duparquet designs, manufactures, and installs complete food service equipment for hotels, restaurants, and institutions; it produces kitchen equipment in metal and wood under the 106-year-old Duparquet brand name.

The consolidated organization also includes: The Straus-Duparquet subsidiaries, Albert Pick Co., of Chicago, large institutional supplier in the mid-

west, and Lyons-Alpha Products Co., Inc., of New York, manufacturer and distributor of the Welsbach broiler-griddle and other food service equipment for hotels and restaurants; and S. & M. Schwartz & Co., Div. of Straus-Duparquet of New York, manufacturer of commercial refrigerators and fixtures for supermarkets.

The new management expects to enlarge the firm's interior design and furniture contract department. In addition, expansion of manufacturing facilities is contemplated.

In the 18 months that Straus-Duparquet's new management team has operated the Grayson company, the rate of its sales and profit has more than doubled.

You Asked About It

From the many requests for information it receives, the News will select and publish some of general interest. In many instances, the answers will be supplied by authorities in the industry.

Q. Why do compressor heads with bad suction or discharge valves overheat? Since the effective volume of pumped gas is down, the only thing which should overheat is the motor (suction cooled), not the head.

W. G.—Columbus, Ohio

A. Dale Bodine, Copeland Refrigeration Corp., replies:

The positive answer to this question depends on whether we are talking about a slight leak, a bad leak—such as a blown gasket between high and low side, or broken valves in the valve plate.

If the suction valve is leaking, the capacity, motor load, watts, and motor temperature will all be reduced. In addition, the

head pressure on an air-cooled condensing unit will be reduced. This is because the valves are not holding and consequently the compressor is doing little or no work.

In the case of a leaking discharge valve, a broken discharge valve, or a blown gasket between high and low side, the situation is quite different.

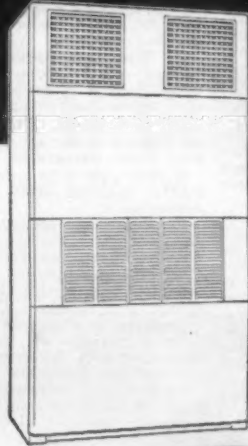
Since the suction valve is still functioning properly, the compressor will draw just as much refrigerant each stroke of the piston as it should. However, since the discharge valve is not holding properly or the gasket is blown, this gas will leak back on each stroke and each time we add heat of compression,

frictional heat, and motor heat. As this continues, the compressor becomes very hot.

Saying it another way, the refrigerant slips back into the cylinder and consequently we have a significant load on the piston at the bottom of the stroke, whereas normally this load would be light. In normal operation, the pressure on top of the piston at the low point of the stroke is quite low, since it is pulling in gas at or below suction pressures. The pressure does not approach discharge pressures until the piston nears the top of the stroke.

If the discharge valve is broken or the gasket broken between high and low side, however, the full discharge pressure will be exerted on top of the piston even while it is near the low end of the stroke. As a result, the motor temperature, motor watts, discharge temperatures all tend to increase.

DETROIT NO. 714 AIR CONDITIONING EXPANSION VALVES



★ Broad Range of Application

2 to 10 tons—12—3 to 17 tons—22

★ Sweat Connection Sizes

Inlet 1/2" to 3/8" O.D.—Outlet 3/8" to 1 1/8" O.D.

★ "G" Charge Level Action Feeler Bulb

Minimizes surge for very close superheat control and maximum valve operating efficiency.

★ Easy To Service

Custom charged power elements can be interchanged for different refrigerants and various capacities.

Entire valve easily disassembled for inspection and cleaning, without removing from the line.



Also available with other Detroit custom charges; "C" for commercial, "Z" for low temperature.

THE 790-L DISTRIBUTOR (2 to 8 passes) is used with the 714 Valve or any O.D. outlet connection expansion valve of comparable capacity. All outlet circuits are 1/4" O.D.

THE 790-M DISTRIBUTOR (9 to 12 passes) is a solder connection distributor for the 714 Valve or any other O.D. outlet connection valve of comparable capacity. All outlet circuits are 1/4" O.D.

Quality Protects Your Investment-- AMERICAN-Standard Quality Is Available At No Extra Cost.



5900 Trumbull Avenue
Detroit 8, Mich.

DETROIT CONTROLS

Division of AMERICAN-Standard



Canadian Representative: RAILWAY AND ENGINEERING SPECIALTIES LTD., Montreal, Toronto, Winnipeg

UL Revises Standard UL 303, Covering Remote Refrigeration Condensing Units

CHICAGO—Several revisions in the "Standard for Refrigeration Condensing Units" of Underwriters' Laboratories, Inc. have been published in the April, 1958 issue of Underwriters' Bi-Monthly Supplement.

The standard, UL 303, covers remote condensing units not exceeding 30 hp. or 600 volts, "which are intended to be employed in accordance with the National Electrical Code."

Significant revisions, according to C. C. Fitzsimmons, UL engineer, occur in paragraphs 12A, 42A and 42B, and 123A.

Paragraph 12A, says Fitzsimmons, "makes it mandatory

that a condensing unit for outside use conform to requirements for outdoor use equipment in the Standard for Air Conditioners, Central Cooling (UL 465)."

Quick-trip overcurrent elements are "afforded recognition" in paragraph 42B, while both 42A and 42B "spell out motor overcurrent protection requirements for condensing units in accordance with interim Amendment 104 to the National Electrical Code."

To assist electrical inspectors in determining that installations

are in accordance with the National Electrical Code, para-

graph 123A contains additional marking requirements, "including the fuse size required for proper protection of group fused installations."

"Essentially editorial changes" is the way Fitzsimmons describes the revisions in paragraphs 140, 176, and 176.

Text of the revisions follows.

TEXT OF REVISIONS

Revisions to Standard for Condensing Units, Refrigeration (UL 303)

12A A condensing unit which is intended to be installed where it may be exposed to the weather is to be judged for compliance with the Requirements for Outdoor-Use Equipment in the Standard for Air Conditioners, Central Cooling (UL 465).

Paragraph 12A added March, 1958—Standard for Condensing Units, Refrigeration—UL 303, First Edition.

42A "Adequate overcurrent protective devices" as referred to in paragraph 42 means overcurrent protective devices conforming to the requirements of the National Electrical Code as follows:

A. A separate overcurrent device which is responsive to motor current. This device shall be rated or set at not more than 125 percent of the motor full-load current rating for sealed (hermetic-type) refrigeration compressor motors having a locked-rotor value not exceeding 160 amperes and motors marked to have a temperature rise not over 40 C and at not more than 115 percent for all other types of motors. This value may be modified as follows:

B. Where the values specified for motor-running over-current protection do not correspond to the standard sizes or rating of fuses, nonadjustable circuit breakers, thermal cutouts, thermal relays, or heating elements of thermal trip motor switches, the next higher size, rating or setting may be used, but not higher than 140 percent of the full-load current rating of sealed (hermetic-type) refrigeration compressor motors having a locked-rotor value not exceeding 160 amperes and not higher than 130 percent of the full-load current rating of other sealed (hermetic-type) refrigeration compressor motors may be recognized.

Paragraphs 42A and 42B added

March, 1958—Standard for Condensing Units, Refrigeration—UL 303, First Edition.

123A The following information shall appear on the condensing unit or wiring diagram:

A. The maximum size of branch circuit fuses if more than one motor is operated from a single supply line, except small condensing units employing impedance-protected fan motors.

B. If provisions for the connection of an external load such as a cooling tower or evaporator motor are made, the maximum load to be connected shall be shown. If provisions for the connection of an external high-voltage switching device such as a thermostat or control switch are made, the minimum required rating for the switching device shall be shown.

C. If more than one disconnect switch may be required to disconnect all power to a condensing unit, the assembly shall be marked to so indicate.

D. If a condensing unit is controlled by a specific-use controller which is not installed on the assembly, the marking on the condensing unit or wiring diagram shall show the identifying designation of the controller and the rating of the proper overcurrent element to be used.

Paragraph 123A added March, 1958—Standard for Condensing Units, Refrigeration—UL 303, First Edition.

140 Electrical parts within the outer cabinet, other than motors and low-voltage parts, shall be individually enclosed if:

A. Their design and location with respect to openings in the outer cabinet may result in the emission of flame or molten metal through openings in the cabinet or otherwise result in a fire hazard.

B. There are openings in the bottom of the compartment in which the part is located which would permit dripping of molten metal, etc., on combustible material.

C. There are openings in the top surface of the outer cabinet which would permit objects to fall on or near uninsulated live parts.

D. Uninsulated live parts may be accidentally contacted. (See Uninsulated Live Parts, paragraphs 205-208.)

E. The part is in proximity to combustible material other than electrical insulation.

Paragraph 140 revised March, 1958—Standard for Condensing Units, Refrigeration—UL 303, First Edition.

175 Field-installation conductors of a high-voltage circuit or a low-voltage circuit with Class 1 wiring shall be segregated or separated by barriers:

From uninsulated live-metal parts connected to a different circuit, other than wiring terminals, and

From any uninsulated live-metal parts of electrical components such as a pressure-limiting device, motor overload protective device, or other protective device, where short-circuiting or grounding may result in unsafe operation of the air conditioner; except at wiring terminals.

176 Field-installation conductors of a low-voltage circuit (Class 2 wiring) shall be segregated or separated by barriers:

From uninsulated live-metal parts connected to a high-voltage circuit, and

From wiring terminals and any other uninsulated live-metal parts of low-voltage electrical components such as a pressure-limiting device, motor overload protective device, or other protective device, where short-circuiting or grounding may result in unsafe operation of the air conditioner.

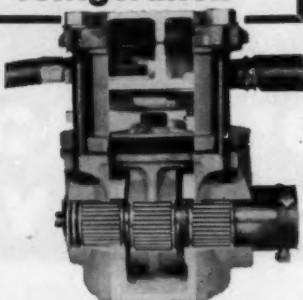
Paragraphs 175 and 176 revised March, 1958—Standard for Condensing Units, Refrigeration—UL 303, First Edition.

ACE, the quality line for air conditioning and refrigeration

MODEL 77

Diaphragm Descaling Acid Pump

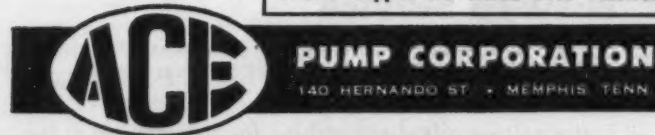
Descaling compounds can't affect this pump! All parts in contact with compounds are completely acid-resistant. Can be supplied as portable unit with pump and motor mounted on sturdy base and with convenient carrying handles.



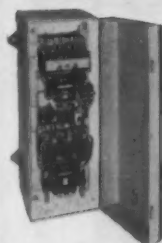
Plus a complete line of centrifugal pumps

... sized to fit your needs. 1/4 H.P. thru 10 H.P. Easy to install and compactly built. Advanced features include exclusive baked-on lifetime finish to enhance appearance and resist corrosion, John Crane mechanical seal, and all-bronze one-piece impellers. Continuous duty motor, 1750 rpm or 3450 rpm.

Orders shipped the SAME DAY received.



ALLEN-BRADLEY reduced voltage MOTOR STARTERS



BULLETIN 740 MAGNETIC

RESISTANCE STARTERS

For starting heavily loaded compressor motors, there's nothing like an A-B Bulletin 740. Graphite disc resistors are automatically inserted in series with the motor for velvet smooth acceleration. Resistors are preset, but can be field adjusted. For manual operation, use Bulletin 640 stepless resistance starters.

AUTOTRANSFORMER STARTERS

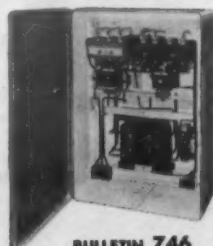
For squirrel cage motors where power company rules require starting at reduced voltage.

The economical Bulletin 646 is operated by a hand lever. Bulletin 746 magnetic starter can be operated by push button, pressure switch, etc. The autotransformer has taps to adjust the motor voltage.

Both starters have air break, silver alloy contacts and provide reliable overload protection. When explosive or corrosive gases are present, the Bulletin 646 starters can be supplied with oil-immersed copper contacts.



BULLETIN 646 MANUAL



BULLETIN 746 MAGNETIC

ALLEN-BRADLEY
MOTOR CONTROL
QUALITY



Allen-Bradley Co., 1313 S. First St., Milwaukee 4, Wis. • In Canada: Allen-Bradley Canada Ltd., Galt, Ont.

- For
- Leak Detecting
 - Soldering • Heating
 - Brazing



PREST-O-LITE Refrigeration & Air-Conditioning Outfit

All the equipment you need for air-conditioning and refrigeration work in one handy steel case.

SENSITIVE LEAK DETECTION

—shows up as little as 100 parts of refrigerant gas in a million parts of air—even leaks too tiny to find with soapy water.

JOB-MATCHED OPEN FLAMES

—three torch stems for the exact flame you need—all instantly interchangeable with leak detector on same handle.

EASY TO USE

—no delicate parts to cause trouble. Color and intensity of detector flame indicate location and size of leak. Torch concentrates heat where needed.

AUTOMATIC CONTROL

—adjustable regulator maintains selected gas pressure. Calibrated screw for fast adjustment. Needle valve on torch handle for precise flame control.

Outfit includes torch handle, leak detector stem, 3 torch stems, regulator, 12 1/2-ft. hose assembly, suction hose, and enameled steel carrying case. Complete (for B or MC Tank), \$41.00.

Available for immediate delivery from your local supplier of LINDE products. Or write for further information to LINDE COMPANY, Division of Union Carbide Corporation, 30 East 42nd Street, New York 17, N. Y.



"Linde," "Prest-O-Lite," and "Union Carbide" are registered trade-marks of Union Carbide Corp.

YOU WILL APPRECIATE THE TECHNICAL SUPERIORITY OF PATENTED, EXCLUSIVE SUPERCHARGER CARBONATORS

YOUR CUSTOMERS WILL APPRECIATE THE

- Higher carbonation
- Peak capacity
- More troublefree operation
- Space-saving compactness

IT'S EASIER, MORE PROFITABLE TO SELL THE FINEST

Jet foamscent Carbonators by Carbonic Dispenser, U. S. Patent No. 2,598,677.

MAIL THIS COUPON TODAY

For literature outlining the opportunity now open to make bigger profits selling Carbonic Dispenser Equipment.

Name _____

Address _____

City _____ State _____



West Coast Plant: 16028 S. Marquardt Ave., P.O. Box 142, Norwalk, Calif.
In Canada: General Equipment Corp., Ltd., Toronto, Ont.

Refrigeration Problems And Their Solution

(As Written by Paul Reed)

Repairing Damaged Metal Finish (1)

A visit to a field warehouse of a refrigerator manufacturer revealed the manner in which any damage to the finish is repaired so that it will look like new.

In the particular operation observed, a refrigerator that had a deep dent on one side and the white finish cut clean down to the metal was repaired. Ordinarily this would be a tough job to take out the dent, restore the flawless surface, and spray it with a perfect match in grain, lustre, and color. However, with the method used, a perfect job resulted.

A DENT AND SCRATCH

First, the repairman took a peculiar looking spray gun from a shelf and plugged it in to the electric current. To it was connected an air hose. He called it the metal-spray gun and said that he was preheating it so that it would be ready for use later.

Then the repairman sanded off all of the white lacquer clear down to the steel to a distance of six or eight inches all around the dent, using an electric disc sander, first with a 24 grit disc followed by a finer disc of 60 grit. This sanding heats the metal, and it is necessary to wait for it to cool to approximately room temperature before the next operation.

'COPPER PLATING' THE STEEL

After the sanded metal had cooled, the repairman took a small bottle of liquid that he called "Reviver" and wet a small clean cloth with it and rubbed it on the sanded steel surface.

The result was astonishing. The surface changed to a bright copper, just as if it had been copper-plated, which indeed it had, for the Reviver contains copper, which is deposited by chemical action on the steel surface.

COLD TINNING

Next he tinned the copper surface. He did this with a paste made from a powder called Cold Tinning Compound mixed with some of the liquid Reviver. He did the mixing with a small wooden paddle, until he had a fairly thick paste of smooth consistency and with no lumps.

He explained that it is necessary to mix the paste fresh and in a small batch, just a few minutes before it is used, and that unused paste must be thrown away.

He applied the paste to the copper-plated finish with an applicator, which was a small piece of wool felt on a handle for ease



PHOTOS COURTESY OF ALBERTSON & CO.
MATERIALS NEEDED to repair dent and finish of appliances: (a) Reviver used to copper plate steel, (b) cold tinning compound powder which is mixed with liquid Reviver to form paste used in cold tinning copper surface, (c) felt applicator for applying cold tinning paste.



METAL-SPRAY GUN for spraying solder on tinned surface.

in using it. First he wet the felt applicator in clean water so that the waste would stick to it, and then spread a little paste on the applicator using the wooden paddle he had used in mixing the Cold Tinning Compound Powder and the liquid Reviver into a paste.

The application of the Cold Tinning Compound paste caused the copper finish to change to a silvery finish. He wiped this with a clean cloth in order to remove

any excess tinning compound. plated the steel and formed a tight bond to the steel. The Cold spray the solder on to fill up the Tinning Compound paste made a dent and to build the surface up smooth. The Reviver copper-

(To Be Continued)

When your problem is...
SIZE...SHAPE or METAL
your answer is
DEAN
GOLD PLATES
"Job Tailored" to your specifications
A baffling problem? Try a Dean Cold Plate made expressly to suit your particular requirements. Made in a variety of metals in cylinders, U's, angles, tanks, etc.
DEAN PRODUCTS, INC. 1042 Dean St. 5Terling 9-3400 Brooklyn 38, N.Y.

Choice territories now available for sales representatives. Inquiries invited.

Get ice machine complaints? Slow freeze, sticking cubes, cloudy ice with bad taste and odor? Use "VIRGINIA" ICE MACHINE CLEANER



When ice machines collect enough impurities from the air and from the water supply, trouble begins. Efficiency drops, cubes turn cloudy and have an objectionable smell and taste. But you can deal with this problem easily, quickly, economically!



"Virginia" Ice Machine Cleaner does the job better than any cleaner you have ever tried! It's perfectly safe to use—will not injure the enamel or polished metal surfaces. Highly effective on automatic cube or flake ice machines.



Turn off refrigeration—fill tray with warm water—dissolve one or two 5-oz. tubes—circulate solution to remove lime deposits, slime and dirt—flush solution out—rinse several times. That's all there is to it! Be sure to clean machines at regular intervals for best results.



Full line of "Virginia" Water Treatment Chemicals includes Scale and Corrosion Inhibitor, Solid and Liquid Scale Removers, Algae-Cides No. 1 and No. 2. For information, write Refrigeration Division, VIRGINIA SMELTING COMPANY, 108 Jefferson Street, West Norfolk, Virginia.

MIGHTY MITE
Motor Protectors Save
THOUSANDS OF
DOLLARS

in Motor Replacement
EXPENSE

MECHANICAL INDUSTRIES
PRODUCTION CO.
223 ASH ST. • AKRON, OHIO

SEND FOR REPRINTS

Product Knowledge, Protective Maintenance, Trouble-Shooting, Adjustment, Repair of Electric Motors.
Only 40¢ each.

For your copy, clip this ad and mail with name and address to: Air Conditioning & Refrigeration News, 450 W. Fort, Detroit 26, Mich.



Ask for free folder, "How to Turn Water into Money"

ESOTO • V-METH-L • CAN-O-GAS • VASCOCEL • PERMAGUM • PRESSTITE TAPE
SUNISO REFRIGERATION OILS • WATER TREATMENT CHEMICALS • SALES AGENT &
REPACKER FOR DU PONT'S "FREON" REFRIGERANTS

Available in Canada and many other countries



American Society of Refrigerating Engineers Program for Minneapolis Meeting

SATURDAY, JUNE 21
8:30 a.m.—Finance Committee breakfast meeting.
12:30 p.m.—Executive Committee luncheon meeting.
6 p.m.—Regional Directors dinner meeting.

SUNDAY, JUNE 22
10 a.m.—Program Committee.
2:00 p.m.—Meeting Sites and Facilities Committee, Standards Committee.
3:00 p.m.—Council dinner-meeting.

MONDAY, JUNE 23
9:00 a.m.—General Assembly.
9:30 a.m.—First Technical Session.
"Automobile Air Conditioning."
"Comfort in the Heat" by J. D. Loveley and R. S. Heym, Chrysler Corp., Detroit.
"Air Flow and Distribution in Air Conditioned Automobiles" by R. D. Foley, American Motors Corp., Detroit.
"Automobile Air Conditioning Controls" by W. H. Jackson, Air Conditioning Section, General Motors Corp., Lockport, N. Y.
9:30 a.m.—Domestic Refrigerator Engineering Conference.
"The Engineer's Responsibility for Serviceability."
"What's the Matter with Appliance Service?" by C. T. Bremicker, Northern States Power Co., Minneapolis.
"Service—The Real Hidden Persuader" by Robert Geran, Kelvinator Div., American Motors Corp.
"The Commercial Value of Quality and Service" by K. G. Roe, General Electric Co., Louisville, Ky.
"Mass Production vs. Serviceability" by J. M. Murphy, Frigidaire Div., General Motors Corp., Dayton.
"Engineering and Serviceability" by F. L. Tarleton, Hotpoint Co., Chicago.
2:30 p.m.—Research Committee.
Spiegel D. B. Chapter Editors.
Domestic Conference Committee.
4:00 p.m.—Admission Committee.
International Affairs Committee.
4:2 Technical Committee.
7:00 p.m.—Publications Committee.

TUESDAY, JUNE 24
8:30 a.m.—Education Committee.
General Technical Committee.
Industry Relations Committee.

Professional Development Committee.
9 a.m.—Sections Conclave.
9 a.m.—Second Technical Session.
"Thermoelectric Refrigeration."
"The Peltier Effect" by John Kronsbein and W. O. Hartsaw, Evansville college, Evansville, Ind.
"Physical Properties of Thermoelectric Materials" by S. V. Galgaitis, Rose Polytechnic Institute, Terre Haute, Ind.
"Thermoelectric Refrigeration" by R. L. Eichhorn, Whirlpool Corp., St. Joseph, Mich.
12 noon.—Research Exhibit and Research Exhibit Review Committees luncheon meeting.
1:30 p.m.—Forums.
1. What Should Be Included in a Standard for Refrigerant Oils?
2. Application Limits of Refrigerants 12 and 22.
3. The Role of Consulting Engineer in the Execution of Mechanical Contracts.
3 p.m.—4. Corrosion and Deterioration Problems of Cooling Towers and Evaporative Condensers.
5. Use of Aluminum in Commercial and Industrial Refrigeration and Air Conditioning Systems.
6. Problems and Developments of the Heat Pump.
1:30 p.m.—Inspection Trips.
1. Whirlpool Corp.
2. Hamm Brewing Corp.
3. Thermo King Corp.
2 p.m.—Awards Committee.
Membership Committee.
Standards Committee.

WEDNESDAY, JUNE 25
8:30 a.m.—Membership Relations Committee.
Technical Coordinating Committee.
9 a.m.—Third Technical Session.
"Performance of Aluminum in Air Conditioning" by A. J. Haygood and D. G. Vandenberg, Aluminum Co. of America, New Kensington, Pa.
"Refrigerant Controls in Air Cooled Condensers" by D. E. Kramer, Kramer Trenton Co., Trenton, N. J.
"Refrigeration Requirements for Future Air Force Weapons" by Col. J. S. Bleymaier, U.S.A.F., Washington, D. C.
12:30 p.m.—Council luncheon meeting.

Joint ASHAE, ASRE Activities

SUNDAY, JUNE 22
9 a.m.—Reception, Aquatennial Preview, Leamington hotel.

MONDAY, JUNE 23
12:30 p.m.—ASHAE Golf Tournament (ASRE invited). Golden Valley Country Club.
5 p.m.—ASHAE County Fair (ASRE invited). Lake Minnetonka.

TUESDAY, JUNE 24
9:30 a.m.—Symposium on Thermal Insulation, Hotel Nicollet.
P. N. Vinther, symposium manager; M. W. Keyes, moderator.
"Reflective and Bulk Insulation" by William Tuberville.
"Block and Pipe Insulation" by R. B. Crepps.
"Vapor Problems in Thermal Insulation" by N. B. Hutcheon.
"Thermal Insulation for Nuclear Systems" by G. W. Pomeroy.
"Surfacing for Glass Fiber and Foam Thermal Insulation" by W. P. Ellis.
1 p.m.—ASRE Golf Tournament (ASHAE invited). Edina Country Club.
2:30 p.m.—ASRE-ASHAE Joint Conference on Air Conditioning, Hotel Leamington.
"Heat Operated Refrigeration and Air Conditioning" by G. B. Priestner, Baltimore Gas and Elec. Co.
"New Developments in Gas-Fired Air Conditioners for Residences" by R. B. Smith, American Gas Assn.
"Absorption Refrigeration for Large Air Conditioning Installations" by J. F. Moore, Lone Star Gas Co., Dallas.
"Steam Driven Turbine Refrigeration for Air Conditioning" by E. A. Dmitrieff, Consolidated Edison Co., New York City.
6:30 p.m.—Cocktail Party, ARI host. Leamington hotel.
7:30 p.m.—Joint Dinner-Dance, Leamington hotel.

WEDNESDAY, JUNE 25
9 a.m.—Symposium on Condensing Methods, Hotel Nicollet.
W. G. Hole, symposium manager; A. J. Hess, moderator.
"Cooling Tower Design and Performance" by John Engalitcheff.
"Evaporative Condensers" by D. D. Wile.
"Air Cooled Condensers" by Otto Nussbaum.
"Economic Evaluation of Condensing Methods" by J. L. Wolf.
1:30 p.m.—Joint Conference on Education, Hotel Leamington.
"Education for Careers in Refrigeration and Air Conditioning."
"The Role and Responsibility of the Educator" by J. B. Chaddock, Rensselaer Polytechnic Institute, and W. F. Stoeker, University of Illinois.
"What Industry Expects of the Engineering Graduate" by C. M. Ashley, Carrier Corp.
"How Can We Interest High School Students and Junior College Students in our Industry?" by B. H. Jennings, ASHAE Laboratories, Cleveland.
"The Role and Responsibilities of Trade Associations and Technical Societies" by P. B. Gordon, Wolff and Munier, Inc., New York City.

American Society of Heating & Air-Conditioning Engineers Program for June 21-25 Meeting

SATURDAY, JUNE 21
Committee meetings.

SUNDAY, JUNE 22
1:30 p.m.—Council meeting.
2 p.m.—Research executive committee.

MONDAY, JUNE 23
3:30 p.m.—Reception.
9 a.m.—First Session.
Call to order, Pres. E. R. Queer.
"A Water Cooled Luminaire in a Panel Air System" by W. F. Spiegel.
"Pulsations in Residential Gas Furnaces with Multiple-Port Burners" by A. A. Putnam.
"Evaluation of Air Cleaners for Air Conditioning and Ventilation, Part I Apparatus" by K. T. Whitby, A. B. Algren, R. C. Jordan, and J. C. Annis.
12 Noon—Welcome Luncheon, Lake-land.

TUESDAY, JUNE 24
9 a.m.—Second Session.

Call to order—1st Vice Pres. A. J. Hess.
"Winter Infiltration through Swinging-Door Entrances in Multi-Story Buildings" by T. C. Min.
"Corrosion Inhibition on Tubes in Low-Pressure Steel Boilers" by W. A. Keilbaugh and F. J. Pocock.
"Heat Gain through Windows Shaded by Canvas Awnings" by Necati Ozisik and L. F. Schutrum.

WEDNESDAY, JUNE 25
9 a.m.—Fifth Session.
Call to order—Pres. E. R. Queer.
"Activated Charcoal for Air Purification" by H. L. Barnebey.
"Cooling Load from Pre-tabulated Impedances" by Harry Buchberg.
"Solar Energy Utilization for Heating, Cooling, Distillation, and Drying" by TAC on Solar Energy Utilization.
Report of Resolutions Committee.

ASHAE - ASRE Program Set--

(Concluded from Page 1, Col. 5)

Tuesday morning, they will join for a symposium on thermal insulation and in the afternoon will hold a conference on air conditioning. They will top off the day with a joint cocktail party and dinner dance in the evening.

For those not attending the joint sessions, ASRE will hear three papers on thermoelectric refrigeration in the morning and carry on a series of forums in the afternoon. The more restless can take inspection trips to one of three local plants or play golf.

ASHAE will hold its second session in the morning, with three technical papers scheduled.

On Wednesday, the combined societies will hold a symposium on condensing methods in the morning and a conference on education in the afternoon. Each society will also hold a technical session in the morning.

ASRE is scheduled to vote Monday morning on whether to submit the proposed merger plan for the two societies to a membership vote at its next regular meeting in December.

ASRE members will also be asked to approve revisions in the ASA B9.1 safety code for mechanical refrigeration and to approve additions and corrections to the proposed standard on refrigeration terms and definitions.

331 Plumbing, Heating, Cooling Contractors Failed In 1957, Dun & Bradstreet Reports

NEW YORK CITY—A total of 331 business failures were reported during 1957 among air conditioning, heating, and plumbing contractors, Dun & Bradstreet, Inc. has announced.

This is the largest number of failures in this group for any year reported by the credit-rating firm. Its statistics go back to 1934.

While there were only 316 failures during 1956, total liabilities of defaulting companies for that year were \$12,997,000. In 1957 total liabilities were only \$12,164,000. Average liability per failure in 1957 was \$36,749.

Dun & Bradstreet said this


record includes those businesses that ceased operations following assignment or bankruptcy; ceased with loss to creditors after such actions as execution, foreclosure, or attachment; voluntarily withdrew leaving unpaid obligations; were involved in court actions such as receivership, reorganization, or arrangement; or voluntarily compromised with creditors.

The 5% increase in liabilities of air conditioning, heating, and plumbing contractors over 1956 compares with an 8% increase for total businesses in all lines. The 6% drop in liabilities compares with a 9% increase for all businesses.

Frank Tyler Retires

CHICAGO — Frank Tyler, Moline, Ill., branch office manager for American Air Filter Co., Inc., has retired after 38 years with the company. He was honored at a dinner.

**You can make 230 volts
from 115 line Voltage
with an Acme Electric
STEP-UP
TRANSFORMER**



• Don't lose the sale of an air conditioning unit because the premises lacks a 230 volts source of supply for one of adequate size.

With an Acme Electric STEP-UP transformer, any 115 volt alternating current source of supply can be increased to provide 230 volt service. Simply connect the STEP-UP transformer to the most convenient 115 volt supply source and connect the air conditioning unit to the STEP-UP transformer.

Type T-10270 STEP-UP transformer, rated at 2000 watts unity pf, will adequately handle load requirements of 1 and 1½ HP air conditioners. Primary voltage 115. Secondary voltage adjustable 200, 220, 240 volts.

ACME ELECTRIC CORPORATION
926 WATER STREET CUBA, NEW YORK

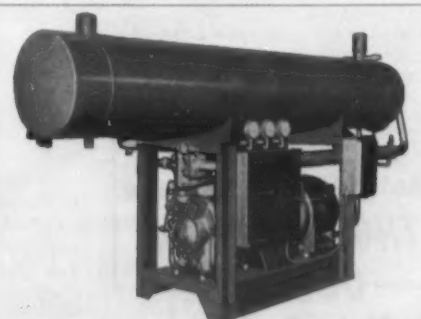
Acme Electric
TRANSFORMERS

Acme INDUSTRIES, INC.
JACKSON, MICHIGAN

manufacturers of
QUALITY
air conditioning
and refrigeration
equipment since 1919

recognized industry-wide

another outstanding new line — Acme
Flow-Cold packaged chillers, capacities 3 thru 20 tons



NEW DD* FLOW-THERM

...*direct drive packaged chillers
in capacities 20 thru 125 tons

Compact Flow-Therm packaged chillers are designed around proven Acme components, including the famous Dry-Ex chiller. Controls are exceptionally complete to save design and installation costs. Flow-Therm performance is factory certified with every unit tested under full load conditions.

Alcoa Perfects Process for Producing Drayer-Hanson -- Tubular Shapes In Sheet and Plate

PITTSBURGH — Aluminum Co. of America announced that it has perfected and greatly amplified a process for producing tubular shapes within sheet and plate.

The product of the new manufacturing method has been identified by Alcoa as "Expandable Tube-Sheet."

It is, the announcement said, "a unique one-piece unit of aluminum sheet, or plate containing a series of lengthwise, parallel areas that can be expanded easily to form integral tubing."

"Achieved without complicated joining or fabricating procedures, the product is exceptionally suited to solve heating and cooling problems found in many industrial processes. Liquids or gases can be circulated safely within the leak-proof enclosures to achieve low cost, efficient performance in heat-transfer and other types of applications."

"Vast possibilities will be opened by the new product in the refrigeration, transportation, residential heating, process industry, and air conditioning fields."

Alcoa now is ready to mass produce Expandable Tube-Sheet utilizing special equipment recently installed at its Alcoa (Tenn.) works. Available in practically all non-heat-treatable alloys, in heat-treatable alloys 6061, 2024, and 7075, the

product will be shipped unexpanded in mill finish coiled and flat sheet.

"When expanded, either hydraulically or with air, a variety of shapes may be obtained by restraining the tubes in dies," it was explained. "Free inflation results in round tubing."

"It also is possible to produce aluminum sheet flat on one side and tubed on the other. Tube diameter can be varied within a single sheet to increased the product's effectiveness. Design possibilities thus are broadened greatly."

"One principal outlet for Expandable Tube-Sheet is expected to be in the heat exchanger field. Household refrigerators, air conditioning units, panel heating or cooling for buildings, and air coolers for aircraft engines offer potential applications for the new product."

Fedders Catalog Covers Remote Cooling Units

TRENTON, N. J.—A new 20-page catalog giving complete sales and engineering data on "Fedair" remote type air conditioning units has been published by Fedders-Quigan Corp., Heating Div., Trenton 7, N. J.

Fedair units are made in four series of standard and recessed floor and overhead models. Each series is available in four sizes.

(Concluded from Page 1, Col. 5) & Stanley, Ft. Worth, the engineer. Working with them was Joiner-Meade-Capers, Dallas agent for Drayer-Hanson.

Initial capacities for the unit are announced as extending from a range of 5,000 to 25,000 c.f.m., up to 8 in. static pressure. Among the features of the unit, as outlined by C. W. Pollock, manager of air conditioning and refrigeration for D-H, are dual forward curved fans, internal vibration isolation of fans and motors; total high pressure construction throughout; and diffusers for even distribution over the coil face.

Purchaser has the option of horizontal or vertical discharge. For ease of servicing, the unit carries three oversize access doors, permitting full-entry examination and servicing.

Construction is of 14-gauge galvanized steel. Panels are removable. Drain pan is 2 in. deeper than on conventional multi-zone models with twin connections on both ends. Heavy channel runners are supplied for shipping and ease of on-job handling.

Discharge plenum is circular designed to eliminate panel deflection and breathing due to high pressure. Rigid blower assembly is stressed. Blowers D.I.D.W., with forward-curved blades, are NAFM rated. Each fan discharge opening has adjustable diffuser to provide even air distribution over the coil face.

The entire motor-blower assembly has a development engineered by Chief Development Engineer A. J. Mallinckrodt—internal vibration mounts with built-in rubber impregnated canvas connection between the blower discharge and fan section frame assembly.

Unit is insulated with fiberglass insulation with sprayed-on plastic coating. An attractive all-weather finish is being supplied on all units.

As an optional extra, units with backwardly-inclined blades are also available.

American Blower Describes Heaters

DETROIT — A new 16-page, illustrated, two-color catalog (Bulletin 9617) describing the redesigned line of American Blower cabinet heaters is available from American Blower Div. of American-Standard, Detroit 32, Mich.

A ready-reference pictorial guide shows 43 different possible mounting arrangements. Tables of steam capacities for 14 cabinet heater models and of hot water capacities for 21 models are also included.

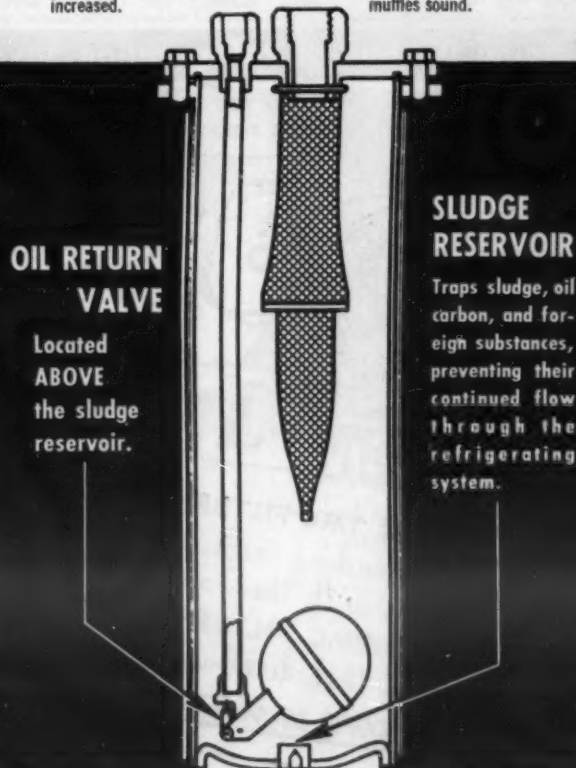


LIND DAVENPORT, president Air Conditioning Supply Co., Drayer-Hanson's Los Angeles sales agent; C. W. Pollock, manager air conditioning and refrigeration division, Drayer-Hanson; Walter Dwyer, Drayer-Hanson sales engineer; and John Joiner, Joiner-Meade-Capers, Dallas representative of Drayer-Hanson view new high pressure air handling unit with "Hot and Cold Deck."

Boost Refrigerating Efficiency and Muffle Sound with a TEMPRITE OIL SEPARATOR

Oil is separated from the gas before it can get into the evaporator and is returned to the compressor automatically...

- Full capacity of expansion valve assured.
- Constant clean oil lengthens compressor life.
- Evaporator heat transfer increased.
- TEMPRITE oil separator muffles sound.



Complete range of capacities for refrigerants 12 and 22.



Listed by U. L. and A. S. M. E.



8 PAGE BOOKLET

ON REQUEST — Describes many advantages of Temprite Oil Separators.



TEMPRITE PRODUCTS CORPORATION
Box 72-A, East Maple Road • Birmingham, Michigan

☐ Send me Oil Separator Booklet No. T-447

Name _____
Address _____
City _____ Zone _____ State _____

TEMPRITE
The Quality Line

Your Sales are the payoff

LA CROSSE COOLER CO.
3000 LOSEY BLVD., SO.
LA CROSSE, WISCONSIN

EXPORT OFFICE:
125 BROAD ST.
NEW YORK CITY
CABLE: EXIMPORT

HI-DRI THE LOWEST PRICED ALL-BRASS DRYER BEATS ALL COMPETITION

- All Brass Shell and Fittings.
- 100% Guarantee.
- Individually Boxed.
- Rated Under ARI Standard 710.
- Filled with Davison's PA-400 Silica Gel.
- All Solder Connections made with Easy-Flo 45 Silver Solder.
- Extra Large Hexes.
- U. L. Approved.



ALSO AVAILABLE WITH YOUR PRIVATE BRAND LABEL.
FOR INFORMATION AND PRICES CONTACT

WABASH CORPORATION 2300 S. WESTERN AVE. CHICAGO 8, ILL.

Servicing Automobile Air Conditioners

BY C. DALE MERICLE

Ford (3) Ford Div.
Ford Motor Co.
Dearborn, Mich.

Controls

Air conditioner and heater control panel of 1956 and 1957 Ford systems is located on the car instrument panel to the right of the steering column. Design and function of the controls differ somewhat for these two models, so they are described separately.

The 1956 control panel (Fig. 3) has two levers. Lever on left, which moves in a vertical slot, controls the blower. Full up position of this lever gives "Hi" speed blower operation; full down position gives "Lo" speed blower operation. Center position is "Off."

Temperature control lever of 1956 panel moves in a horizontal slot to control both heating and cooling. This lever controls the right ventilator air valve, the evaporator louver intake (for recirculated air), the heater thermostat, and the control cut-out switch.

Three control cables are attached to the temperature control lever. One cable connects to the heater thermostat. Second cable runs to the air valve in the right fresh air intake. Third cable connects to a bell crank on top of the evaporator



FIG. 3—Control panel of 1956 Ford system.

housing (Figs. 1 and 11). The bell crank, in turn, is connected to (1) adjustable louver on right side of evaporator housing for controlling amount of recirculated air, and (2) the control cut-out switch which is part of the bell crank assembly.

Thermostatic switch controlling solenoid by-pass valve to prevent icing of coil also is on top of evaporator housing.

When the temperature control lever is in center position, the right ventilator air valve is positioned to admit 100% outside air, the evaporator return air intake louver is completely closed, the control cut-out switch is open (de-energizing the electrical circuits to (1) the magnetic clutch, and (2) the thermostat and solenoid by-pass valve), and the heater thermostat is closed.

With the control lever in center, neither the cooling or heating system is in operation, but outside air is available for ventilation.

Moving the control lever to

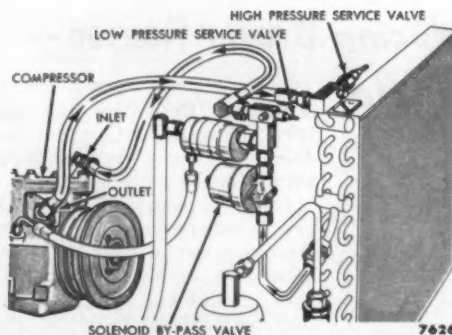


FIG. 4—Ford 1956 system employs solenoid by-pass valve to prevent icing of evaporator.

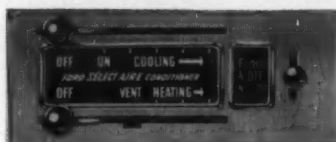


FIG. 5—Control panel of 1957 Ford system.

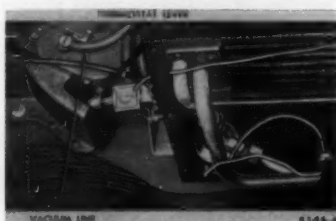


FIG. 7—Thermostat of 1957 Ford unit cycles magnetic clutch and compressor to control amount of cooling.

the extreme left makes maximum cooling available. With the lever at extreme left, the right ventilator air valve is closed, the evaporator intake louver is fully open for 100% recirculated air, and the electrical circuits to the clutch and solenoid by-pass valve are energized. To obtain cooled air in the passenger compartment, however, the blower must be turned on.

Moving the control lever to an intermediate position between extreme left and center partially closes the recirculated air intake louvers and partially opens the fresh air intake valve. The outside air by-passes the evaporator, so temperature control is achieved by varying the mixture of recirculated air and outside air while the compressor is operating.

Function of the thermostat and solenoid by-pass valve (Fig. 4) in the 1956 Ford air conditioner is to prevent icing of the coil. The solenoid by-pass valve is closed when its electrical circuit is energized. When the evaporator temperature falls too low, the thermostat breaks the circuit, the by-pass valve opens, and high-pressure refrigerant from the upper part of the condenser is admitted to the suction line, thus raising suction pressure and evaporator temperature.

Thermostat, which can be adjusted in the field, is set at the factory to open at 28° F. and close at 34° F.

For heating on the 1956 system the temperature control lever is moved to the right.

Three control levers are used on the 1957 Ford system (Fig. 5). Blower control is on the right and moves in a vertical slot. Full up position gives "Hi" speed blower operation; full down position gives "Lo" speed blower operation; center position is "Off."

Two control levers move in horizontal slots on the 1957 system. Upper "Cooling" lever controls the temperature setting of the thermostatic switch and

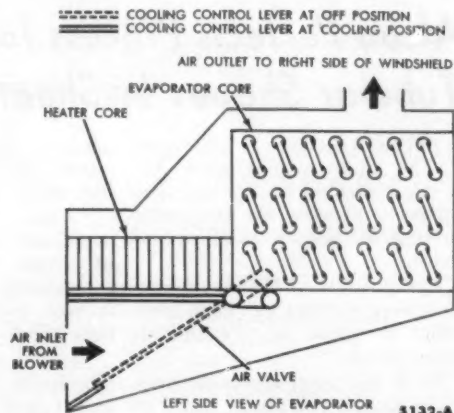


FIG. 6—Air valve directs air through evaporator for cooling or through heater core for heating on 1957 Ford unit.

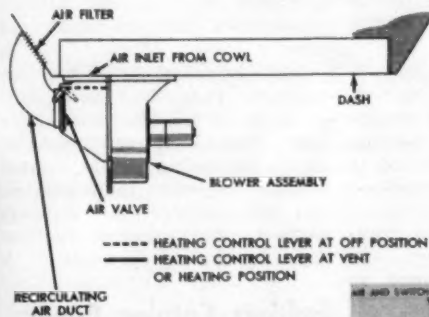


FIG. 8—Ford 1957 system operates on 100% outside air only for heating, but damper arrangement permits 100% outside air, 100% recirculated air, or a proportion of both to be used for cooling.

the air valve in the evaporator assembly.

Lower "Heating" lever controls the hot water thermostat and the air valve which proportions amount of outside air and/or recirculated air entering the system.

When cooling is desired, the "Heating" lever is moved to the extreme left "Off" position. This closes the hot water valve, closes the outside air inlet, and opens the recirculating air intake.

"Cooling" lever is then moved to the right from its extreme left "Off" position. This positions the air valve in the evaporator housing (Fig. 6) so that all air from the blower goes through the evaporator instead of the heater core, and turns the thermostat on (Fig. 7), which in turn causes the magnetic clutch to engage and the compressor to operate.

Moving the "Cooling" lever farther to the right lowers the setting of the thermostat and thus lowers temperature of air delivered to car interior.

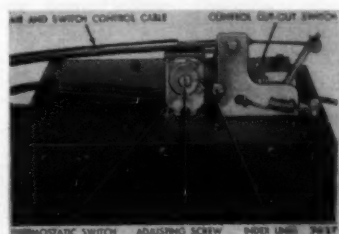


FIG. 11—Thermostat of 1956 Ford system can be adjusted in field to change cut-in and cut-out points of solenoid by-pass valve.

With the cooling system in operation, moving the "Heating" control lever from its extreme left "Off" position proportions the amount of recirculated and outside air admitted to the evaporator. (The outside air does not by-pass the evaporator, however, as in 1956 Fords.)

Positioning the "Heating" control lever directly under "Vent" admits 100% outside air to the system (Fig. 8).

For winter heating with the 1957 Ford system, the "Cooling" lever is moved to "Off," and the "Heating" lever moved to the right beyond the "Vent" position.

(To Be Continued)

Leading Doctors of Refrigeration Say:

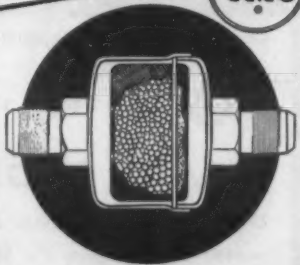


R Then use TMC FILTER-DRIERS—
tests by leading refrigeration
laboratories with their specialists
prove that TMC FILTER-DRIERS
get rid of that tired-wet feeling.
START USING IMMEDIATELY!

TMC

- 1/10 THE SIZE OF OLD STYLE FILTER-DRIERS
- 19 TIMES AS EFFICIENT

Refrigeration and air-conditioning men are proving that TMC Filter-Driers are superior in Moisture Removal, Filtration, Acid Removal and Pressure Drop. TMC Molecular Sieve Filter-Driers are new in principle, new in performance and new in economy. They save installation space, save inventory and reduce costs.



Write for
Questions and Answers
Bulletin 1157
RIGHT NOW.

TUBE MANIFOLD CORPORATION

435 Bryant St.

N. Tonawanda, N. Y.

Another Product of the World's Largest Manufacturer of Liquid Receivers

CLASSIFIED ADVERTISING

RATES for "Positions Wanted" \$7.50 per insertion. Limit 50 words. 15¢ per word over 50.

RATES for all other classifications \$10.00 per insertion. Limit 50 words. 20¢ per word over 50.

ADVERTISEMENTS set in usual classified style. Box addresses count as five words, other address by actual word count. Please send payment with order.

POSITIONS AVAILABLE

AN AMBITIOUS and energetic sales engineer having some experience with refrigeration application who is looking for a promising future with an attractive salary arrangement and who is desirous of growing with a well-known manufacturer should investigate this ad. Applicant must be willing to relocate and do some traveling. BOX A6041, Air Conditioning & Refrigeration News.

EQUIPMENT FOR SALE

NATIONALLY FAMOUS brand new hermetic motor compressor comes at closeout prices! 1/2 h.p. only \$25.00. Other sizes up to 1 1/2 h.p. at equally low prices. Also, tremendous savings on complete hermetic condensing units ranging in size from 1/2 h.p. All brand new, all guaranteed. Send for listing and prices to MANN REFRIGERATION SUPPLY CO., 440 Lafayette St., New York, N. Y. GRamercy 3-8000.

WELL KNOWN brand condensing units: Open type (New) 1/2 hp air cooled - less motor \$55.00. 1 1/2 hp. water cooled - less motor \$144.00. 3 hp. water cooled - less motor \$175.00. FOB Chicago, Illinois. Send for bulletins and catalog on money saving refrigeration values: WALTER W. STARR, 2833 Lincoln Ave., Chicago 13, Illinois.

BUSINESS OPPORTUNITIES

HEATING & air conditioning contracting firm for sale. Established, franchised dealer on Florida's Gold Coast - top brand equipment. Complete installation and service facilities, trained personnel, all necessary equipment and inventory. Yearly gross: \$200,000. Asking \$35,000. BOX A6001, Air Conditioning & Refrigeration News.

TRUCK & TRAILER refrigeration dealer, sales & service, authorized franchise on leading make of unit, fully equipped, east coast - main highway, willing to sell part or all interest. All replies confidential. BOX A6042, Air Conditioning & Refrigeration News.

MISCELLANEOUS

REBUILDING SEALED units? Flapper valves for York built compressors duplicated. Send old valve and name plate data. OWENS & RIEK, 2905 Greenbrier Dr., Dallas 26, Texas.



NEW 17-CASE Cap. SELF-CONTAINED BEVERAGE COOLER \$250

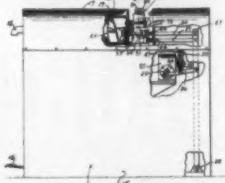
6 or more \$235—10 or more \$225
Stainless steel doors and track. Top, front and 2 sides finished in "Multi-kolor". All radius and ball corners. Tecumseh unit, concealed coils. No interior obstructions of unit or blower. Size—54" l. x 26" w. x 39" h.

4-BROTHERS
REFRIGERATION MFG. CO., INC.
1427 S. 8th St. Phila. 47, Pa.

PATENTS

Week of March 25

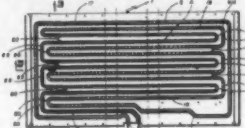
2,827,773. **AUTOMATIC FEEDING MECHANISM FOR MILK FOR CUSTARD MAKING MACHINES.** Edgar W. Detjen, Kiel, Wis., assignor to Stoelting Brothers Co., Kiel, Wis.



1. In an ice cream or like frozen product making machine including a closed freezing cylinder and means for

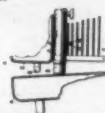
aerating and feeding the product toward one end of the cylinder. . . .

2,827,774. **INTEGRAL EVAPORATOR AND ACCUMULATOR AND METHOD OF OPERATING THE SAME.** Arnold Dunkelmann, Cincinnati, Ohio, assignor to Avco Mfg. Corp., Cincinnati, Ohio.



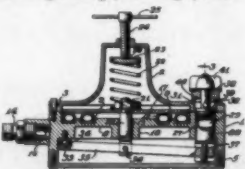
3. The method of continuously operating a refrigerator evaporator having a sheet with which a refrigerant channel is associated in heat transfer relationship, the channel including a first portion for absorbing heat from substantially the entire area of the sheet and a second portion in heat transfer relationship with the first portion comprising maintaining liquid refrigerant in the first portion at all times and maintaining liquid refrigerant in the second portion to an extent proportional to ambient temperature conditions affecting the refrigerator in which the evaporator is located.

2,827,863. **SAFETY DEVICE FOR REFRIGERATORS.** Hyman Ritzberg, Arlington, Va.



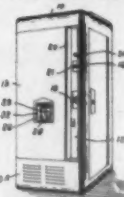
1. A safety device for refrigerators having removable shelves and a swinging door, comprising a cylindrical housing secured to the side of the refrigerator and terminating in contact with the inner side of the swinging door when closed, said housing being closed at the end farther from the door and formed with a longitudinal slot closed at each end and in that half of the housing having the open end and a centrally located hole communicating with the interior of said housing. . . .

2,827,915. **PRESSURE REGULATOR.** James H. Rice, Chicago, and John W. Baur, Glenview, Ill., assignors to Binks Mfg. Corp., Chicago, Ill.



1. A fluid regulator comprising in combination, a relatively flat support, a spirally coiled resilient distensible tube having a plurality of convolutions carried by said support and adapted for connection in a fluid flow circuit, a relatively flat plate positioned upon said coiled tube to substantially cover all of said convolutions, resilient means for urging said plate into contact with said tube and acting against said support whereby said plate is responsive to distention of said tube due to fluid pressure therein. . . .

2,827,927. **BEVERAGE DISPENSING MACHINE.** Albert James Findlay, Montreal, Que., Can., assignor to John F. Russell, Jr., New York, N. Y.



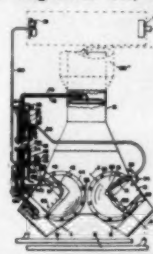
1. A liquid dispensing apparatus.

Editor's Note: Patents described here have been selected from the "Official Gazette" of the United States Patent Office. They offer only a brief summary of each invention. In some instances only the first part of the digest is presented.

Printed copies of patents, reissued patents, and patent designs may be secured from the Patent Office; patents and reissues are 25¢ each, while designs are furnished at 10¢ each. Address orders to: Commissioner of Patents, Washington 25, D.C.

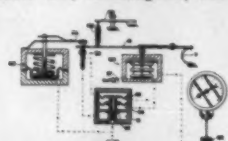
comprising in combination, a housing, said housing including a dispensing opening, a support assembly within the housing carrying a number of cups in stacked relationship, releasing means for releasing the cups one at a time, the released cup being adapted to pass along a predetermined path to liquid receiving position, first control means actuated by the passage of said cup through part of said path. . . .

2,828,076. **AIR CONDITIONING APPARATUS.** Lawrence E. Donahue, Des Plaines, Ill., assignor to Minneapolis-Honeywell Regulator Co., Minneapolis.



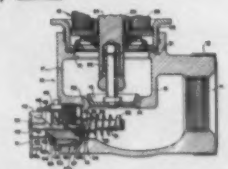
1. Valve apparatus including a Y-shaped duct structure the bifurcated portion of which is adapted to be connected to a double duct air conditioning system and the opposite extremity of which is adapted to be connected to a space to be air conditioned, a centrally located weir positioned in each of the bifurcated portions of said duct structure, diaphragm means positioned in said duct structure on either side of said weir for cooperation with said weir to close the passages through said duct structure to the opposite extremity thereof. . . .

2,828,077. **PNEUMATIC THERMOSTAT.** Richard C. Mott, Chicago, Ill., assignor to Minneapolis-Honeywell Regulator Co., Minneapolis, Minn.



1. In a pneumatic thermostat, a base plate, a U-shaped bimetal attached at one extremity to said base plate, an elongated armature member attached to the opposite extremity of said bimetal and extending in substantial parallelism with said base plate, a first passage through said base plate including a restriction therein and terminating in a nozzle on the upper surface of said base plate adjacent the free extremity of said armature for a cooperation therebetween. . . .

2,828,102. **VALVE ACTUATOR LATCH MEANS.** Martin S. Larson, Minneapolis, Minn., assignor to Minneapolis-Honeywell Regulator Co., Minneapolis, Minn.

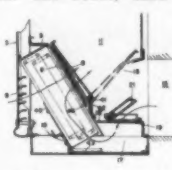


1. A manual actuator for a power operated valve comprising a bearing sleeve having a longitudinally extending slot in the inner end thereof, a shaft rotatably mounted in and extending through and beyond each end of said sleeve, a valve actuating arm extending laterally from one end of said shaft, packing means around said shaft, a combined torque and compression spring between said arm and packing, the ends of said spring being anchored on said arm and in said slot, respectively. . . .

2,828,110. **SELECTIVE ROOM HEATER AND COOLER.** Forrest G. Baker, Moline, Ill., and Arthur F. Hubbard, Davenport, Iowa, assignors to American Air Filter Co., Inc., Louisville, Ky.

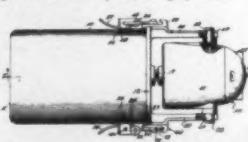
1. A dual heating and cooling ventilator for a room comprising: a cabinet having air inlet means and an air outlet, and including a heat exchanger

adapted to receive a tempering fluid, and blower means between the inlet means and outlet for directing air from the inlet means through said outlet into the room, said air inlet



means including openings for the admission of outside air and recirculating room air. . . .

2,828,113. **ICE CREAM FREEZER.** Leroy H. Knibb, Chicago, Ill.

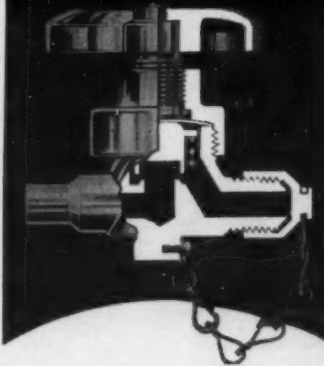


1. A freezer for use in a refrigerator, comprising: a receptacle having an open end, a removable cover for closing said open end, a shaft coaxial with and in the receptacle, a dasher on said shaft, an electric motor including a casting extending outwardly from the cover and a shaft in said casting. . . .

(To Be Continued)

Precision Designed for REFRIGERATION and AIR CONDITIONING SYSTEMS

THE NEW KEROJET CHARGE, PURGE and DRAIN VALVE



- Costs Less
- Full open height only 2 1/4"
- Seal cap with chain attached
- 2 1/2" diameter handwheel, colored for easy identification

Designed for ease of operation, this new valve features compact packless diaphragms of beryllium copper and stainless steel, for maximum resistance to wear. Rugged forged brass body has integral mounting flange. Maximum operating pressure, 500 p.s.i. Maximum temperature, 200° F. Connection size inlet 3/4" solder connection—outlet 1/2" male flare. See your Kerotest wholesaler today.

Ask for No. R224X1



KEROTEST MANUFACTURING CO.

2502 Liberty Avenue
Pittsburgh 22, Pa.



19 TIMES AS EFFICIENT

Molecular sieves, the newest class of adsorbents, are the most efficient desiccants on the market . . . have the ability to adsorb at high temperatures up to 19 times more water.

- Eliminate acid corrosion
- No capacity loss due to oil adsorption
- Minimum of pressure drop
- Greater reserve capacity

**SMALL IN SIZE . . . ONLY FIVE SIZES
HANDLE 1/4 TO 10 TONS**

A standard drier can be reduced to a fraction of its usual size with no loss in drying capacity because of greater efficiency of Molecular Sieves. Only five sizes are necessary to handle installations up to 10 tons. This means a minimum inventory and stock control.

**ALL COPPER AND BRASS CONSTRUCTION
WITH MONEL WIRE CLOTH FILTERS**

REASONABLY PRICED

PERFORMANCE RATED

KMP Moisture Magnets are tested and rated in accordance with ARI STANDARD 710

WRITE for full information. Inquiries welcomed.



KMP

KENMORE MACHINE PRODUCTS, INC.

LYONS, NEW YORK

SPECIAL DELIVERY BY ROCKET?

No, we aren't using the new ballistic missiles yet, but maybe some day. In the meantime, Harry Alter gives you the fastest possible service. Your orders are handled with careful speed. Complete inventories and streamlined methods assure truly snappy service.



We're Real Specialists in

REFRIGERATION • AIR CONDITIONING • ELECTRIC MOTORS

SUPPLIES and PARTS

SAVE MONEY, time and effort by ordering from our new *Dependabook*, the most complete catalog of all. 160 pages. Over 10,000 items carried in stock. Wholesale only. Your orders filled really fast by mail, or picked up at one of six big warehouses.

Write on your letterhead for the 1958 *DEPENDABOOK* . . .

Also our monthly *Flyer* of surplus and close-out Bargains.

The HARRY ALTER CO., Inc.

FREE PARKING AND FAST COUNTER SERVICE AT THESE 4 BIG WAREHOUSES

Chicago 16, Ill. New York 18, N. Y. Dallas 7, Tex. Atlanta 10, Ga.
1712 S. Wabash Ave. 134 Lafayette St. 122 Parkhouse St. 690 Stewart Ave., S.W.

FOUR STORIES ABOUT DUNHAM-BUSH



ARCHITECT: Damon, Worley, Samuels and Associates
CONSULTING ENGINEER: Superior Engineering Co.
CONTRACTOR: Reliance Heating and Air Conditioning Co.



ADJUSTING CONTROL OF 'CRV'
ROOM AIR CONDITIONER

- 1 DUNHAM-BUSH COOLING
- 2 DUNHAM-BUSH HEATING
- 3 BRUNNER COMPRESSORS
- 4 HEAT-X PACKAGE CHILLER

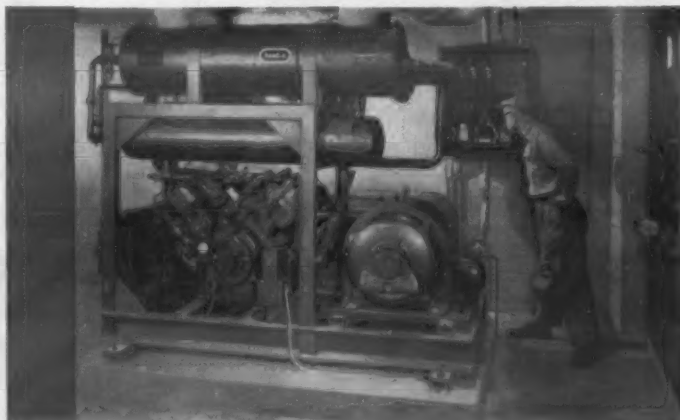
The high quality heating and cooling equipment which services all four stories of the handsome new Suburban West office building, Cleveland, Ohio, is a physical expression of the Dunham-Bush 'one source — one responsibility' reputation.

A 75 Ton Heat-X Package Chiller, efficiently assisted by a rugged Brunner Compressor, supplies chilled water to the air conditioning system. 130 Dunham-Bush CRV Remote Air Conditioning units provide quiet, year 'round air conditioning of the building. 20 Dunham-Bush Recessed Convectors satisfy the heating demands.

A complete climatic network of heating, cooling, air conditioning, and air dehumidification by Dunham-Bush, the name that means "the best".



RECESSED CONVECTORS FOR HEATING



HEAT-X PACKAGED CHILLER WITH BRUNNER COMPRESSOR

Dunham-Bush, Inc.

WEST HARTFORD 10 • CONNECTICUT • U. S. A.

MICHIGAN CITY, INDIANA • MARSHALLTOWN, IOWA • RIVERSIDE, CALIFORNIA • BRUNNER DIVISION, UTICA, NEW YORK

SUBSIDIARIES

HEAT-X, INC.
BREWSTER, N.Y.

THE BRUNNER CO.
GAINESVILLE, GA.

DUNHAM-BUSH (CANADA), LTD.
TORONTO, CANADA

DUNHAM-BUSH, LTD.
LONDON, ENGLAND

BRUNNER CORPORATION (CANADA) LTD.
PORT HOPE, ONTARIO

DUNHAM-BUSH

heat-x

BRUNNER
SINCE 1904